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THE

EDINBURGH MEDICAL AND SURGICAL JOURNAL:

EXHIBITING

A CONCISE VIEW

OF THE

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IN

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VOLUME SEVENTEENTH.

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1821.

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The following Publications have been sent to us for Review:

Medical Transactions, published by the College of Physicians in Lond Vol. VI. 8vo, London, 1820.

Lectures on the Structure and Physiology of the parts composing the Sk leton, and of the Diseases of the Bones and Joints of the Human Body; pr ceded by some observations on the influence of the Brain and Nerves, d vered before the Royal College of Surgeons of London in the Summer of t year 1820. By James Wilson, F. R. S. 8vo. Lond. 1820.

General Elements of Pathology. By Whitlock Nicholl, M. D. M. R. I. F. L. S. 8vo. Lond. 1820.

An Inquiry into the Nature and Causes of Animal Heat and Inflammati By John Byrn, M. D. 8vo. Dublin, 1820.

Elements of the Theory and Practice of Physic; designed for the use Students. By George Gregory, M. D. 8vo. Lond. 1820.

A Treatise on the Plague; designed to prove it contagious. By Sir Arth Brooke Faulkner, M. D. 8vo. Lond. 1820.

A Treatise on Dyspepsia or Indigestion. By J. Woodforde, M. D. 8v Sherborne, 1820.

A Synopsis of the Diseases of the Eye, and their Treatment: To which are prefixed, a short and anatomical Description and a Sketch of the Physio logy of that organ. By Benjamin Travers, F. R. S. 8vo. Lond. 1820.

A Practical Treatise on the Diseases of the Eye. By John Vetch, M. D. 8vo. Lond. 1820.

A Statement of Facts, tending to establish an estimate of the true value and present state of Vaccination. By Sir Gilbert Blane. 8vo Lond. 1820.

Observations on Variolous Inoculation and Vaccination; in a Letter to a Friend. By J. F. Hulbert. 8vo. Lond. 1820.

Observations on the Cheltenham Waters, and the Diseases in which they are recommended. By James M'Cabe, M. D. 8vo. Cheltenham, 1820.

A Chemical and Medical Report of the Properties of the Mineral Waters of Buxton, Matlock, Tunbridge Wells, Harrogate, Bath, Cheltenham, Leamington, Malvern, and the Isle of Wight. By Charles Scudamore, M. D. 8vo. Lond. 1820.

A Toxicological Chart, in which is exhibited at one view the Symptoms, Treatment, and Modes of detecting the various Poisons, Mineral, Vegetable, and Animal; according to the latest experiments and observations. By a Member of the Royal College of Surgeons in London.

Outlines of Midwifery, developing its Principles and Practice; with twelve Lithographic Engravings. By. J. T. Conquest, M. D. F. L. S. 12mo. Lond. 1820.

The Dentiste de la Jeunesse, or, the Way to have sound and beautiful Teeth, preceded by the Advice of the ancient Poets, upon the Preservation of the Teeth. By J. R. Duval, Dentist. 8vo. Lond. 1820.

A Reply to certain oral and written Criticisms, delivered against an Essay on Lithotomy, published in the January Number of the American Medical Recorder. By Granville Sharp Pattison, Esq. 8vo. Philadelphia, 1820.

Ricerche Mediche su i Bagni a Vapore a di Calorico, e Sulle Fumigazioni di Sostanze Ammoniacali e Balsamiche, di Zolfo, di Mercurio, &c. &c. del Dott. Paolo Assalini. Tom. I. 4to. Napali, 1820.

Revue Medicale Historique et Philosophique. Par MM. V. Bally, Bellanger, F. Berard, Bestieu, Bousquet, Delpech, Desportes, Double, Dunal, Esquirol, Gasc, Giraudy, Jadioux, Laurent, Nicod, Prunelle, Rouzet. 1re Annee IV. et V. Liv.

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1. JANUARY 1821.

PART I.

ORIGINAL COMMUNICATIONS.

I.

Observations on Cholera Morbus and other Diseases, which prevailed epidemically among the Soldiers of the 56th Regiment, stationed at Port Louis, Mauritius, in the end of the year 1819 *and beginning of* 1820. By JOHN KINNIS, M.D. In a Report addressed to Sir JAMES M'GRIGOR, Director General of the Medical Department of the Army, and communicated by him to the Editor.

SIR,—During the most fatal period of the epidemic, which lately swept this colony with such cruel violence, I happened to be in a great measure in charge of the 56th regimental hospital, and, at the desire of Dr Burke, Inspector of Hospitals, and principal medical officer in the island, I have now the honour of giving you some account of the observations I had occasion to make on that and certain other diseases which occurred about the same time. The patient study and minute record of symptoms, I found too frequently incompatible with the harassing calls perpetually made on my attention, and the immediate interests of the men entrusted to my care; and you will, I trust, accept this as a sufficient apology for the necessary imperfections of the present communication.

The 56th regiment marched from the windward to the leeward side of the island, on the 25th July last, 827 strong. Of this number, 108 were detached to form a working party in the wood betwixt Mahebourg and Port Louis; 139 to different other outposts; 84 invalided or sent home with the 22d regiment; and 506 remained at head-quarters.

The following table is given as a standard of comparison.

It shows the number of admissions (excluding surgical cases) from the regiment's arrival in Port Louis to the termination of the epidemic. The men at work in the wood having been partly withdrawn in September and wholly in October, and the other detachments occasionally changed, the number remaining at head-quarters is placed at the top of the column for each month. It is only of the diseases included within brackets that any account shall be here attempted; as these all occurred about the same time, had certain symptoms in common, and greatly exceeded in number the ordinary rate of admissions, we may perhaps safely assume that they all depended on the same cause, modified in its operation by peculiarities of constitution, habits of life, and circumstances of exposure. Of the 138 cases, about forty were treated by Mr Markham, surgeon of the 56th regiment, and the remainder by myself; but, it is necessary to premise, that my observations shall be wholly taken from my own cases, with the exception of two fatal ones, for which, with his permission, I am indebted to Mr Markham's diary.

DISEASES.	Number Admitted each Month.								
	July. 505	Aug. 506	Sept. 564	Oct. 536	Nov. 617	Dec. 593	Jan. 617	Total.	
Apoplexia,	1							1	
Ascites,							1	1	
Catarrhus,		1						1	
Cephalalgia,							1	1	
Colica,	1		1	1	2		2	7	
Cholera lethalis,					2	12	1	15	138
Cholera mitior,			1		2	28	11	42	
Diarrhœa, &c.					2	17	6	25	
Vomitus, &c.					5	17	1	23	
Signa anomala,						30	3	33	
Dysenteria,		4	2	2	5	1	4	18	
Epilepsia,		1					1	2	
Febris ephem.*	1	5	1	6	3		7	23	
Febris interm.		1					1	2	
Febris rem.				1				1	
Hæmoptysis,				1	1			2	
Hepatitis,	1	5	3	3	4	1	4	21	
Icterus,						1		1	
Nephritis,					1			1	
Phthisis,								1	
Pneumonia,		2	1	2	1		1	7	
Rheumatismus,		1	1	2				4	
Splenitis,					1			1	
Vomitus,*			3	2		1		6	
Total,	4	20	13	20	29	109	44	239	

* Mostly arising from inebriety.

The violent form of the disease was preceded, in one case, by constipation, and, in two others, by diarrhœa, of some days duration; but the greater number of patients enjoyed their ordinary health within a few hours of the attack. It generally commenced with headache, vertigo, lassitude, tormina, or tension and uneasiness in the abdomen; and, though these symptoms were sometimes absent, and often so slight as to pass unnoticed, in the general account which the person gave of his sufferings; yet, in one case, they were judged sufficiently important to require medical aid, and diarrhœa, the first symptom to which the patient usually pays much attention, did not here occur, until about an hour after he had taken an ounce of Epsom salts.

The case alluded to is the only one in which diarrhœa did not come on spontaneously; the evacuations were generally most numerous on its first occurrence; after admission into hospital, they seldom exceeded one or two every hour; in one case they were completely suppressed, but in another amounted to twenty the three first hours. The first evacuation was copious, those which followed more scanty, and remarkably uniform; they consisted of a clear colourless fluid, thinly interspersed with white flakes, and strongly resembling pus diffused through water; in a single case, they were reddish, mucous, and attended with tenesmus; in two others, tenesmus was present after the diarrhœa had ceased.

This symptom was always accompanied, either in its commencement or very soon afterwards, by nausea and thirst; but three or four hours generally elapsed before vomiting occurred; once only the stomach was emptied before, and, in another case or two, at the same time with the first evacuation from the bowels. When this event had taken place, the patient's thirst had become unquenchable, and vomiting was repeated as often as he yielded to its irresistible demands. The fluid rejected was of course the last liquid ingesta, almost always in a state of great purity; one patient, with much retching, discharged a green-coloured mucus, another said he had thrown up a green and sour but not bitter fluid before admission; two patients vomited each two lumbrici, and a third patient one. Retching was by no means common.

Soon after the occurrence of vomiting, the muscles of the extremities were attacked with spasms; their bellies swelled up into hard knots, very conspicuous even at some distance, and became the seat of insupportable pain. A single paroxysm seldom lasted longer than a few seconds; but they shifted from one muscle to another, and continued to recur until within a short time of the patient's death. Sometimes their intermissions were hardly perceptible, in other instances, an hour or half an hour long. They were never observed to attack more than one muscle, or at least one set of muscles at the same time. They were now and then entirely confined to the calves of the legs, and always more frequent in these parts than elsewhere. Sometimes they commenced in the toes or soles of the feet, and successively attacked the legs, thighs, and arms. They were seldom confined to one side, and generally attacked the corresponding muscles in the opposite, limbs. The upper extremities were rarely affected. In one case, the muscles of the right cheek, and in another, the muscles of the abdomen, were attacked, but these are the only unequivocal examples of their occurrence in any other parts than the extremities.

The severity or frequency of the cramps bore no evident relation to the danger of the disease; for though, in some of the worst cases, they formed the principal complaint, in the eyes of the patient, yet, in two or three Europeans, they were late in occurring, or only casually mentioned, and, in a Mozambique, who died eleven hours after reporting himself sick, they seem to have been absent altogether. *

The strength of the pulse began to sink at a very early period of the disease; when first examined, it was in general extremely feeble, soon after intermitted, became more and more feeble, until it could not be counted, and left the wrist altogether, some hours before death. In one case, however, it is stated to have been full and strong, and, in one or two others, of moderate strength, on admission. It was once preternaturally slow, twice of the usual frequency, and, in all the other cases, from 100 to 120 in the minute.

Lassitude and giddiness have been already enumerated among the earliest symptoms, and the muscular power continued to diminish in proportion to the force of the circulation. One patient, about an hour after the attack, was seized with such debility, in obeying the first call to stool, that he walked, with infinite difficulty, a distance of fifty yards; another, after voiding loose stools, and vomiting several times, during the day, suddenly found himself in the evening bedewed with a co-

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* This was a government slave attached to the hospital, and the only Black I have myself treated; yet, I have seen more than a dozen patients of colour, under the treatment of other medical officers, and, in no single instance did I happen to be present when cramps occurred. From the testimony of those gentlemen, I entertain not the least doubt that Blacks are liable to cramps in this disease, though, I cannot help thinking, that they are much less so than Whites.

pious perspiration, and so feeble, that it was necessary to carry him off the parade; and a third came into the surgery, complaining of pain in the abdomen, and dropped down senseless, before he could get farther in the description of his sufferings. In the greater number of cases, however, the accession of debility was by no means so sudden or striking. On Christmas morning, for example, a man breakfasted with indifferent appetite, and went twice to stool a little after 10 o'clock; but attended divine service at 11, and, in returning from church at 1, was attacked with nausea, vomiting, and diarrhœa. When first seen in hospital, at half-past two, his pulse was 116, and moderately strong, yet, a few minutes after 9 the same evening, he breathed his last. Another patient, six hours from the first attack, walked a considerable distance to the hospital, without assistance; and, in order, as he said, to drive away the cramps, continued to perambulate the ward an hour and a half, until the arrival of the medical officer: in eight or nine hours more he died.

The general surface was pale, the features collapsed, the countenance impressed with hopeless anxiety, and the forehead sometimes covered with drops of sweat. With one exception, in which the disease was ushered in by a cold fit, the patients all complained of burning heat, in every part of the body. This sensation made them exceedingly restless, toss about in bed, and throw off their coverings; at the same time, the perspiration not unfrequently overspread the whole surface, and the temperature, which had been sensibly below the natural standard from the beginning, sank rapidly, the extremities, in particular, acquiring an icy coldness; this was more remarkable in the hands and fore-arms than in the lower limbs, the patients being more solicitous to uncover the upper than the lower parts of the body. The perspiration was cold only on parts exposed to the air. Several patients exclaimed, on immersion into the warm bath, that it was scalding hot; whilst the hand of a person in health could bear it without inconvenience, for any length of time.

In two cases the tongue was furred on admission; in all the rest clean; it sometimes became furred before death.

One patient had a constant desire, but could void no urine; and the only other, in whom this secretion was attended to, voided none after the first attack.

Such were the symptoms before and on admission into hospital. The subsequent treatment produced in them considerable modifications, which remain to be noticed.

The diarrhœa became less and less frequent till it disappeared altogether; cathartic enemas, exhibited a few hours after admission, were seldom returned; and no patient had a stool of any description for at least four or five hours before death.

The tormina, which had preceded or accompanied the attack of the disease, generally ceased before the vomiting commenced; and the vomiting, when attended by nausea and retching, produced considerable soreness in the præcordia and hypochondria; but in two cases only was there a fixed pain and tenderness of abdomen.

Unless the patient had self-denial to refrain from drink, or to take it in the most sparing quantity, no measures resorted to were of any use in checking vomiting; yet, in one case, this formidable symptom appears to have ceased spontaneously: a piece of lint, soaked in laudanum, had been applied to the epigastrium, and half a drachm of the same tincture given internally, without any decided effect: his tongue being furred, it was resolved to try an emetic of ipecacuan and tartarized antimony; he vomited none from the moment of its exhibition, but survived it very few hours.

The warm bath was generally grateful to the feelings, after patients had overcome the shock produced by the sudden change of temperature; in one case only, it gave rise to insupportable anxiety, and could not be used longer than two minutes. It frequently increased the strength of the pulse, diminished the violence of the cramps, and restored to the extremities their natural warmth; the two first effects were momentary, the last remained some hours, if the patient could be persuaded to keep himself under the bed-clothes. In addition to these good effects, it produced another, which was certainly far from beneficial, a copious flow of perspiration, when this symptom had not previously existed, and an amazing increase of its quantity when it had.

A propensity to sleep generally followed the exhibition of opium, and the patient sometimes peevishly entreated that he might be left to his repose, but his anxiety and restlessness continuing, he could never properly gratify his inclinations. If the quantity of opium had been very large he dosed much, or fell into a state of stupor, from which he was only roused, from time to time, by the recurrence of cramps or vomiting.

Whether from internal feeling, or remarking the fate of their fellow-sufferers, few, if any, of the men attacked had the smallest hopes of recovery; and the settlement of each one's little worldly affairs was among the first objects that occupied his attention. The intellectual faculties remained unimpaired till the moment of death, excepting in a patient, who became affected with low delirium, after quitting the hot bath, and in the black formerly adverted to, who wanted to get out of bed shortly after admission, saying he was again in perfect health.

For a longer or shorter time before death, the nails, lips, and sometimes the extremities, were of a livid colour; respiration was performed with the mouth wide open; the tongue felt cold, like a part detached from the living body, and the skin of the hands was formed into wrinkles, as if from long immersion in water.

The shortest period in which any case terminated fatally was seven hours from admission, the average period nine or ten. Two patients, after being considered out of danger, fell victims, both on the twelfth day, either to the shock produced by the disease on the constitution, or to the quantity of calomel taken into the system. One of these cases shall be presently detailed.

Out of fifteen cases, of which this account of the symptoms may be considered a pretty full abstract, three only recovered. In the prefixed table, I have denominated them *cholera lethalis*, from the frightful rapidity of their course, and almost inevitably fatal termination. The term spasmodic cholera, adopted by Curtis, in his very excellent description of the disease, could have been applied with no propriety to the form which it put on in this island.

I perform a very painful duty in detailing the following case, for it appears to me extremely doubtful, whether the patient was cut off by the disease or by the remedy. At the time of its occurrence, I had tried most of the remedies usually recommended, without the smallest success, in two cases; I had heard of their failure in many more, and, in so desperate a disease, I felt justified in pushing a new remedy to what, under any other circumstances, I should have considered most unwarrantable excess.

Robert Reed, aged 42, eastward of the Cape 15 years.

December 4, half-past 7 A. M.—Transferred from the surgical ward, where he has been under treatment, since the 19th ultimo, for ulcers of the legs. About eight o'clock last evening, he was attacked with looseness, to which, in the course of an hour, were added tormina, and, at four this morning, severe headache, nausea, and vomiting. Since midnight he has suffered, every now and then, from painful cramps of the feet and legs. The pain of abdomen is now constant, but not aggravated on pressure; his countenance expresses the greatest anxiety, and, a few minutes ago, he groaned with pain. The matter passed by stool resembles pus diffused in water. Pulse 102 and very feeble; extremities colder than natural, though covered with the bed-clothes; at this moment the left gastrocnemius muscle is swollen up with cramp; tongue furred in the back part; urgent thirst; abdomen much retracted. His abdomen was fomented at three in the morning.

Let the legs and arms be vigorously rubbed with spirits, a scruple of calomel given, a warm bath administered, and a rubefacient of mustard, garlic, and capsicum, applied to the præcordia. Let him drink rice-water, with two ounces of spirits to the pint.

Half-past 8.—He has vomited once since he came out of the bath; extremities retain the heat which they there acquired; pulse 102, rather stronger.

Repeat the calomel, with a grain of opium.

Mid-day.—He did not again vomit until a few minutes ago, and then only a mouthful of the fluid he had been drinking. Has taken four ounces of spirits mixed with congee-water. Cramps have affected the muscles of his legs only three times since he was in the bath, and he complains much less of the pit of his stomach; pulse 102, more feeble, and intermitting six or eight times in the minute. A drachm of laudanum, an ounce of spirits, and two ounces of warm congee-water, have just now been given, and rejected by vomiting.

Let him have a scruple of calomel every hour, and an enema every half hour until it operates, consisting of an ounce of tincture of rhubarb, half an ounce of Epsom salts, and six ounces of hot rice-water; weak grog for ordinary drink.

5 P. M.—Has taken three 20 grain doses of calomel, and had five enemas. He has vomited frequently, and probably retained none of the calomel. The first enema was kept about ten minutes, the others discharged almost immediately, without any feculent matter. From the beginning he has had a sensation of burning heat over the whole surface; to the feelings of another, his abdomen only is hot, legs and feet cool, upper extremities (which he constantly exposes) cold; face covered with a cold scanty sweat; pulse 114, and extremely feeble, but not intermitting; pain of præcordia equally severe as in the morning; thirst continues most urgent, and he generally rejects his drink the moment after taking it; tongue clean; dislikes congee-water and spirits, saying the latter "burns his inside;" prefers tea, and expresses a desire for an anodyne and fomentations to the epigastrium. The sinapism has just been removed.

Let him have now a scruple of calomel, with a grain of opium, and an hour hence, an ounce of salts and two ounces of the infusion of senna. Foment the abdomen with hot water.

8 P. M.—He has vomited none since he took the calomel and opium. The evacuations from the bowels, though still liquid, are of a yellowish red appearance, the former shade of colour probably depending on the presence of bile; hands cold, feet only cool; pulse 102, very feeble; continues to complain of the præcordia; has this minute vomited a considerable quantity of coffee he had been drinking; cramps in the calves of the legs three or four times since 5 o'clock; fingers much wrinkled; he lies with his mouth open, and

his tongue is cold; constantly throws the coverings from the upper parts of his body. The salts and senna were not given.

When he shall have been half an hour without vomiting, let him take an ounce of Epsom salts, and two ounces of infusion of senna; if he reject these, let him have a scruple of calomel and a grain of opium, every two hours during the night.

December 5, 6 A. M.—He rejected the cathartic draught almost instantly; again vomited at five this morning, and begins to do so just now. He ascribes all this to the rice-water. Has taken four scruples of calomel, with a grain of opium to each: the first dose was probably rejected. Several pale, brown, liquid stools; pain of præcordia less severe; cramps, once or twice, in the calf of the left leg; has slept altogether about two hours, but not longer than twenty minutes at any one time. Pulse 81, not more feeble than it was last night; hands and feet cold.

Continue the calomel, without opium, every second hour; let him take two ounces of senna tea, rendered palatable with sugar; and have bottles of hot water applied to the feet.

11 A. M.—He has had the uncommon fortitude to disregard the importunate solicitations of his thirst, and has vomited none since six o'clock. Two scruples of calomel taken. Pulse 78, and stronger; very little pain of præcordia; no alvine discharge; feet have been warmed by the bottles; he loathes every thing in the shape of nourishment.

5 P. M.—He has slept the greater part of the time since last report. Has taken three doses of calomel, and two or three spoonsful of chicken broth. No evacuation, either from the stomach or bowels; feet continue warm, though the bottles were removed at eleven o'clock. Pulse 80, tolerably strong; tongue warm; two ineffectual efforts at stool; some headache; no pain of præcordia.

Continue the calomel; give him four ounces of senna infusion, and repeat it at the end of three hours; if he vomit this, let him have an enema of salts and senna.

December 6, half-past 6 A. M.—No vomiting the last 24 hours. The senna was not repeated. At nine o'clock, P. M. he was found asleep, and was ordered an enema of salts and tincture of rhubarb, when he should awake, which he did about midnight. He has since had a yellowish brown liquid evacuation; slight vertigo; tongue moist, and covered towards the back and sides with a dark brown fur; no great thirst; extremities warm; pulse 68, of tolerable strength; hands not wrinkled.

Omit the calomel. Of salts two ounces, infusion of senna six ounces, oil of peppermint six drops, let him take an ounce every hour until it operates.

Half-past 7 P. M.—Has taken the medicine as directed, without any cathartic effect being produced. Feels very uneasy in the abdomen, and has made several vain efforts at stool; no vomiting; very little thirst; pulse rather slow, of natural strength and fulness. His mouth is swollen, lips ulcerated, gums very tender; and, on being questioned particularly as to the first appearance of these symptoms, he makes a very interesting disclosure, which is, that his mouth became sore, and saliva increased, on the 26th ult., after he had taken, in small doses, eighteen grains of common mercurial pill, in order to promote the cure of the ulcers, on account of which he came into hospital; that, some days afterwards, he was on the point of communicating this circumstance to his medical attendant, when that gentleman's attention was directed to another object by the inspector of hospitals, who just then happened to enter the ward; and that he did not again think it worthy of notice. He adds, that the ptyalism entirely ceased, on the day immediately preceding the attack of cholera, and recommenced only at two o'clock this afternoon.

Let him have an enema of tincture of rhubarb and salts, and, unless it previously produce its full effects, another an hour hence.

December 7, half-past 7 A. M.—Neither of the enemas having brought any thing away, an ounce of castor oil was given at ten o'clock, and followed by a very copious liquid blackish-brown stool, which deposited a dark-greenish sediment; no evacuation since, but a good deal of tenesmus; complains of slight griping, and of the soreness of his mouth, which is more swollen than yesterday, without any great increase of saliva; pulse 80, full and strong; tongue rather foul; no appetite; thirst.

Repeat the castor oil, and let him use an alum gargle. At midday an enema of ten grains of aloes, and four ounces of rice-water. A pint of milk; half a pound of bread.

10 P. M.—Another ounce of castor oil.

December 8.—His bowels were not again open till early this morning, when he had a tolerably copious offensive stool, of a lighter colour than yesterday's. Mouth a good deal more swollen; tongue and teeth very foul; gums bleed; little ptyalism; pulse 72.

An ounce of Epsom salts.

9.—Four stools since yesterday morning, copious, fœtid, and of a dark brown colour, intermixed with green streaks; mouth considerably better; pulse 80.

Six drachms of salts; two gills of Madeira; continue the bread and milk.

10.—Two or three evacuations before two P. M. yesterday, but none since. At twelve last night, he was attacked with pain in the præcordia, tormina, and tenesmus; tongue cleaner; gums still bleed; pulse 72, and weaker; anorexia; no thirst.

A warm bath. Of infusion of calumbo 8 ounces, tincture of senna 1 ounce, let him take a spoonful thrice a-day; and, if it do not act on his bowels, give him an ounce of salts.

Evening.—Two or three loose fœtid stools since he took the salts; has now no pain of any consequence; pulse 72, tolerably strong.

11.—Gums continue to bleed very profusely; no pain of abdomen; pulse 82; two or three dark-brown stools during the night.

Let the strength of the alum gargle be doubled.

Mid-day.—A blister to the nape of the neck.

12.—Blister rose well; gums somewhat better; pulse 78; three stools.

Continue the gargle.

14.—His lips are still ulcerated, but his gums have ceased to bleed; tongue covered with a blackish fur; very little thirst; pulse 88, rather weak; only one scanty stool yesterday; much tenesmus during the night.

Half an ounce of salts, and, unless it shall have operated, another at mid-day. To his extras add two ounces of sago.

Evening.—He is a great deal worse; pulse considerably weaker than in the morning, and hands covered with a profuse cold sweat, which is more sparingly spread over the rest of the body; could not take his sago, from the pain it occasioned in his throat; gums have bled some to-day; six or seven brown coloured stools, though the salts were not repeated.

A glass of Madeira every two hours.

15.—Died at one o'clock this morning.

For the dissection, see Table of Morbid Appearances, No. 5, next page.

From this case, it may be fairly inferred, in the first place, that the impregnation of the system with mercury is totally useless as a prophylactic measure against cholera, that being the condition of the patient when attacked; secondly, that the mercurial influence is suspended, during the continuance of the disease; and, lastly, that in the cases of dysentery, reported in Dr Johnson's work on Tropical Climates, in which 12, 15, and even 18 scruples of calomel, exerted no deleterious effects on the patient, a considerable quantity of it was probably passed by stool.

In the following table are mentioned, along with the patient's name, such medicinal articles employed, as may be conjectured to have influenced in any way the appearances on dissection. With regard to the second column, the first cyphers denote the patient's age, the next, his years east of the Cape, the third, hours in hospital, and the last, hours which elapsed betwixt his death and the inspection of his body. Plummer (No. 3) was only seen after death; he was well enough, on the 1st December, to march to an outpost 15 miles distant, but at nine in the evening, was attacked with the usual symptoms of Cholera, brought to town in a canoe next day, and died just before entering the harbour, at 1 P. M.

TABLE of Morbid Appearances.

Name, &c.		Cranium.	Spinal Canal.	Heart.	Stomach.	Intestines and Gall-Bladder.	Miscellaneous.
1. Phillips. Laudanum, 4 dr. several spirituous enemas; spirits internally.	24 4 12 4	Natural.	Not examined.	Natural.	Filled with congee-water and spirits.	Intestines contained a fluid closely resembling purulent matter,—no bile; in the ilium a lumbricus; inner coat of large intestines blackish; gall-duct perforate throughout.	
2. Gregory. Opium, 2 gr.; spirits, 8 oz.; spirituous enemas.	35 35 12 3	Serous fluid under the dura mater, and ½ oz. in base of brain; 1 oz. in lateral ventricles; brain rather soft.	3 dr. of serous fluid under the dura-mater.	Natural.	Filled with the fluid drunk before death. Many dark spots on its inner surface.	A substance resembling shoemaker's paste, and imbedding a worm in small intestines; coats thickened, another worm in large intestines; rectum distended with fluid, and contracted like an hour glass; no bile in any part of intestines. Ductus choledochus distended with bile and perforate. Sigmoid flexure of colon on right side.	Left kidney considerably smaller, and ureter considerably larger than the right; where the duct enters the pelvis, its coats, for about an inch, greatly thickened, indurated, and itself contracted, but perforate.
3. Plummer.	42 10 4	Not examined.	Veins of pia mater distended with blood.	Natural.		Small intestines not thickened, but containing a fluid similar to that mentioned in the last case, and 8 worms. No bile.	

4. Dickenson. Treated nearly as No. 1. & 2.	22 4 9 7	Sinuses of brain and small veins of lateral ventricles distended with blood; ½ dr. of serum in ventricles; 2 dr. on base of cranium.	A small quantity of serum under the dura mater. Larger vessels of pia mater distended with arterial blood.	A little frothy blood in the interstices of columnæ carneæ and musculi pectinati, otherwise all the cavities empty.	Speckled surface a good deal paler than usual.	A number of gelatinous flakes over the surface of intestines. Several dark venous spots in the course of small intestines, which contained 9 lumbrici, and a white fluid like pus in the upper part, of more consistence and greyish colour in the lower. No bile.	Abdomen contained about half a pint of serum.
5. Reed. Opium, 5 gr.; calomel, 16 scr.; spirituous cathartic enemas.	42 15 11 days 11	Serous fluid under dura mater, and 3 dr. in the ventricles.	Serum under the dura mater and in one part between the layers of the pia mater, of which the veins were turgid.	Natural.	Speckled surfaces darker than usual.	Lower portion of ilium of a blue colour externally, of a dark red internally. Internal surface of large intestines of the same colour. Bile mixed with their contents in their whole course. Intus-susception of ilium.	Mesenteric glands enlarged.
6. Reece. Opium about 4 gr.; calomel, 9 scr.; Madeira, 1½ bottle.	32 9 51 12	A little more than 1 dr. of serum in the ventricles.	Veins of pia mater nearly empty.	Blood intermixed with bubbles of air.	Lined with a thick blackish coloured mucus, interspersed with greyish portions.—Wanted its usual speckled appearance, and contained a pint and a half of a blackish fluid.	Colon and duodenum tinged deeply with bile, and communicating their colour to the hands. Duodenum contained a bilious fluid. Small intestines loaded with venous blood, and veins of mesentery large. Ilium contained a worm in the usual fluid, and was thickened in its coats. Ascending colon filled with an offensive liquid, resembling in colour mercurial ointment.	

Name, &c.		Cranium.	Spinal Canal.	Heart.	Stomach.	Intestines and Gall-Bladder.	Miscellaneous.
7. Brookbank. Opium, quantity uncertain; calomel, 12½ scr.	47 15 11 days 21	Serum under dura mater, and between pia mater and tunica arachnoides; 2 dr. in ventricles.	Serum under dura-mater, 3 dr.	Natural.	Internally of a dull green colour, with a few dark red specks.	Small intestines greenish blue externally, and containing a dark olive green fluid in their upper part; it gradually became thicker, and of a deeper colour, so as to resemble tar at the lower part of ilium. Large intestines contained a dark brown fluid. Gall-bladder divided into 2 bags, containing a puriform fluid.	Left lung adhered closely throughout to the contiguous parts.
8. Marks. Opium, quantity uncertain; calomel, 10 scr. (much of it vomited;) Madeira, 1½ bottle, (greater part vomited.)	37 10 18 7	Serum under the dura mater; in the ventricles, 1½ dr.	Serum under dura mater about 2 dr. In some places of pia mater blood unusually florid.	Blood, but no coaulum in all its cavities.	Contained a blackish green fluid; a black mucus interspersed with white flakes, and a pill hardly at all dissolved. Lined in many places with the same kind of mucus, and a few venous coloured spots.	Small intestines transversely streaked with rather large veins. Duodenum, and part of jejunum, filled with a yellow chyme; the greater part of the ilium with a white paste and a worm; more vascular where this insect was than elsewhere. Gall-bladder grass-green.	Omentum contained little fat, and was of a light red colour. Mesenteric glands enlarged.
9. Purvett. Laudanum, 1 dr. calomel, 3 or 4 scr.; spirituous enema; some Madeira.	35 11 18 9	Serum under the dura mater; in ventricles, 2 dr.	Serum under the dura mater about ½ oz.	Flaccid and left ventricle thinner than usual.	Many black and greyish black elevated lines, running in the direction of its rugæ. In a few places its natural speckled appearance, but unusually dark.	Small intestines red, from blood in the minute arteries. Duodenum and jejunum filled with an olive green fluid; nothing of this kind in the ilium, the lower portion of which contained a substance like albumen, changing to a roseate hue in descending to	Omentum adhered to the peritonæum, about 4 inches on the right side. An additional spleen, the size of a small filbert.

; rum, a considerable quantity.	8	ventricles, 2 dr.			and, in many places, lined with a brownish grey thick mucus, contained ½ pint of a thick fluid, largely intermixed with this mucous, and of a spirituous odour.	ed with a reddish fluid. Large intestines lined with that kind of paste frequently found in the small. Gall-bladder flaccid.	throughout, and right in several places. Liver adhered loosely by several membranous threads to the neighbouring parts.
11. Blacklock. Laudanum, ½ dr.; calomel, 2 or 3 scr.	38 8 9 6	Serum under dura and pia mater; in ventri. 2 dr.; veins of dura and pia mater very turgid.	Veins of pia mater very turgid.	A serrated bony ridge ¼ inch in length, between left appendicle of auricle and the ostium ventriculi.	Internal surface thickly beset with small venous coloured spots, running chiefly in the direction of its rugæ, contained a thick greyish and dark reddish fluid.	Ilium had a very slight blush diffused over it, and the commencement of the colon unusually dark. In duodenum and jejunum 4 worms, the former contained a light yellow liquid, but there was no trace of bile in any other part of the canal. Gall-bladder half full of bile.	Mesenteric glands slightly enlarged. Left lung adhered in one part by long threads, right universally, and closely to the chest. In place of left testicle, a rough ovate osseous substance.
12. Hill. Laudanum, ½ dr.; (vomited;) calomel uncertain; spirits.	28 4 7 14	Veins of dura and pia mater very turgid; serum in ventricles, two-thirds of a dr.	Veins of pia mater very turgid.	In pericardium, 2 dr. of pale reddish fluid; heart very flaccid, and right as well as left ventricle empty. Blood in right auricle intermixed with bubbles of air.	A black thin fluid with large portions of calomel. Stripes of a black venous colour in the direction of its rugæ.	Small intestines of a reddish white colour, excepting the lower portion of the ilium, which was livid. In duodenum, a thin olive green fluid, interspersed with portions of a mucous consistence; no trace of bile in any other part. Upper part of ilium contained 6 lumbrici; lower portion, a reddish mucus. Large intestines a brownish grey fluid.	

Name, &c.		Cranium.	Spinal Canal.	Heart.	Stomach.	Intestines and Gall-Bladder.	Miscellaneous.
13. Knokes. Opium, 2 grs.; calomel, 48 grs.; spirituous cathartic enemas.	37 15 12 14	Serum between pia mater and tunica arachnoides; in ventricles, 2 dr. and basis cranii 1 oz.; brain softer, and dura mater more vascular than usual.	More than two ounces of serum under dura mater.		Viscid mucus adhering very closely to its inner coat.	Upper part of canal contained a whitish matter of a pappy consistence, and the large intestines a quantity of glairy fluid. No bile in the intestines. Intus-susception in the ilium.	

The following recapitulation of the morbid appearances will save you some trouble, and supply one or two deficiencies in the table.

In one case, the brain was mangled by an officious orderly, during a momentary absence of the operator; and in another, appeared natural; but in all the rest, there was serous effusion into the ventricles; and, in the greater number, likewise between the membranes and on the base of the cranium; when between the membranes, before these were divided, it resembled a transparent jelly.

In exactly one half of the cases, there was effusion under the dura mater of the spinal cord. The veins of its pia mater generally appeared very turgid, but, having very lately begun to examine the spine on dissection, I was doubtful whether to consider this a natural or a morbid appearance, and seldom noted it down. In one case, the blood contained in these vessels was of an arterial colour, resembling a coarse injection; in another it was partly venous and partly arterial.

The circulating system presented, in general, no deviation from the usual appearances; none of that congestion in the lungs, or any of the viscera, which others have found, and which seemed to offer so plausible an explanation of the most remarkable symptoms attending the disease. In one case, all the cavities of the heart were empty; and in three, the interstices betwixt its columnæ carneæ and musculi pectinati filled with a frothy blood. In two cases, the heart appeared unusually flaccid; and, in one of them, the parietes of its left ventricle unusually thin. Once the pericardium contained two drachms of a pale reddish fluid.

The abdominal viscera seldom presented any thing unusual externally; yet in one case, there was scattered over them gelatinous semi-transparent flakes, and the abdomen contained half a pint of serum. The small intestines exhibited in four cases a very light arterial blush, and, in the one where this appearance was most distinct, the omentum adhered to the peritonæum for some inches on the right side. In several cases, the large intestines and the mesentery were loaded with venous blood, and in two the lower portion of the ilium, and the large intestines, were blue, or greenish blue externally, and dark red internally.

The speckles, natural to the mucous coat of the stomach, were sometimes merely paler than usual, or of a dark venous hue; in other cases, instead of a minutely speckled surface, there were large black or greyish black patches, at one time distinct, at another coalescing into ridges upon the rugæ of the stomach, and apparently arising from effused blood. Where mercury had been taken in great quantity, these patches were few in number, or rather obscured by a black or dull green thick ropy mucus, which lined the stomach, and was interspersed with greyish portions; in such cases, the stomach contained a considerable quantity of a similar substance, in a more liquid form; in one case it contained a thick grey and dark reddish coloured mucus.

The small intestines were generally thickened, and lined with a substance resembling in colour and consistence shoemaker's paste. In eight of the cases examined, the lumbricus teres was found imbedded in this substance, sometimes to the number of eight or nine; and one patient, in whom none were found on dissection, had vomited them before death.*

The large intestines were either contracted and empty, or filled with a greyish white puriform, sometimes fœtid, or dark brown fluid. In one case, the rectum resembled an hour glass, being distended with fluid, and contracted in the middle.

In three or four instances the gall-bladder was flaccid; in general, it was distended beyond the margin of the liver, with blackish green thick bile. It was, in one subject, whitish, translucent, and about an inch from its fundus, divided by a narrow neck into two bags, both which were filled with a thin white fluid, intermixed with purulent looking flakes; the cystic duct appeared at first imperforate, but with a very little force the probe could be passed to the duodenum. The gall-bladder communicated freely with that gut, in every other case.

In the patient, who had complained of inability to void urine, the bladder was contracted and empty, as it almost always is after death.

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* My friend Mr Gillespie, one of the surgeons to the civil hospital, informs me that he has seldom had occasion to open a Black subject, without finding worms in the intestines. Whether they may equally infest European adults, in this island, I have yet had few opportunities to determine. They are here, as every where else, very common in children.

Several other morbid appearances have been included in the table; but need not again be noticed, as they could have no possible connection with the disease. I shall only remark that No. 2 affords the second example of the sigmoid flexure of the colon on the right side which I have met with in dissection, and that this malposition is not mentioned by any of the writers on morbid anatomy, whom I have lately had an opportunity of consulting.

It will not be necessary to bestow on the less severe affections the same attention which has just been paid to the violent form of the disease; they will be better explained by examples than by any general description. It is right, however, to premise that a very arbitrary classification has been adopted. The principal symptoms, of which different patients complained, were headache, vertigo, general debility, tormina or fixed pain in the abdomen, cramps, diarrhœa, thirst, and vomiting. When the greater number of these were present, in the same individual, the affection was termed *cholera mitior*; when vomiting existed without diarrhœa, or the contrary, the predominant system gave a name to the disease; and, when any difficulty arose, in referring a set of symptoms to one of these three heads, they were regarded as anomalous.

The following is an example of cholera mitior.

Daniel Day, aged 35, east of the Cape 13 years.

December 11, half-past 6 P. M.—Yesterday he ate little dinner, experienced a degree of faintness, and, about three o'clock in the afternoon, while on guard, was attacked with diarrhœa and tormina. The tormina ceased at ten this morning, but, about an hour before, he had been seized with slight headache, giddiness, nausea, and vomiting of whatever he drank. At eleven, a profuse warm perspiration broke out over his body, dried up in a quarter of an hour, and was succeeded by coldness of the surface and by cramps, commencing in the toes, affecting afterwards the calves of the legs and thighs. They attacked once or twice his fingers, much oftener his left than right leg, and ceased between two and three this afternoon. He has refrained from drinking, and vomited none since the same hour. He has voided to-day nine liquid yellowish stools; pulse 94, of moderate strength; tongue rather white, but not furred; vertigo diminished; thirst still urgent.

A scruple of calomel now, and an ounce of Epsom salts in three hours.

12.—Six stools during the night and two this morning; at midnight was attacked with nausea and vomiting of a bitter fluid; headache considerably increased; tongue foul posteriorly; thirst continues; no return of cramps.

Of salts, two ounces; infusion of senna, six ounces; let him take an ounce thrice a day.

Evening.—Six stools, of a dark brown colour; very little headache; no return of vomiting or cramps.

13.—Giddiness and anorexia are his only remaining complaints; five or six stools in the night.

Intermit medicine.

14.—Eight evacuations since yesterday morning; appetite returns; tongue clean. Fifteen grains of rhubarb.

15.—Only two stools.

17.—Discharged from hospital.

In this, and the greater number of cases, diarrhœa was one of the chief symptoms, but in that which follows, and in one or two more, which could not well be referred to any other head, the bowels appear to have been rather confined than loose.

CHARLES NAVEN, aged 28, east of the Cape 14 years.

December 6, 9 A. M.—Between four and five o'clock this morning, he was attacked with nausea, vomiting, severe pain of abdomen, and pain of thighs. The last mentioned symptom does not arise from cramps, but is constant, and compared, by the patient, to the feeling produced by a sound beating with a stick. At the moment of drawing this comparison, he cries out, "There are the cramps now," and the calf of the left leg is observed to be the part affected. The pain of abdomen is increased on pressure; pulse 102, full and strong; extremities moist, and moderately warm; slight headache; urgent thirst. Took a single glass of spirits, besides his allowance, yesterday; bowels were twice open, but this morning not once.

A scruple of calomel to be given, and repeated every time it is vomited. The warm bath, and, an hour afterwards, an enema of salts and senna.

Evening.—On coming out of the bath, he was well wrapped up in triple blankets, and has been in a state of profuse perspiration ever since. The enema did not operate till 3 P. M., at which time it brought away a very copious yellow coloured offensive stool; this carried off entirely the pain of abdomen, and was succeeded by a sleep of an hour and a quarter. Five scruples of calomel were given, but how much of it rejected is uncertain. No vomiting since one o'clock; thirst much diminished; tongue nearly quite clean; pulse only 68, of good strength; extremities of natural heat; soreness of thighs better; headache remains considerable; slight cramps once or twice during the day.

Intermit calomel. An ounce of salts early in the morning.

7.—He vomited the salts about half an hour ago, and the fluid is tinged with bile; his headache, which had become trifling, has since been more severe; pain of thighs almost gone: no cramps; a good deal of thirst; perspires very copiously; pulse 94.

An enema of salts and senna.

8.—Seven stools yesterday; none to-day; debility is his only complaint.

Intermit medicine.

11.—No stool since the night before last.

An ounce of salts.

12.—Five stools.

14.—Discharged.

In Diarrhœa, the evacuations were sometimes merely increased in number, and preceded by tormina, but, most frequently, they were attended by anorexia, nausea, thirst, headache, vertigo, pain, and weakness of back or loins, and other marks of general debility. The subjoined case is a very poor example, but given in illustration of the popular notions of the prophylaxis in cholera.

Corporal William Gibbon, aged 29, east of the Cape 4 years.

December 15, evening.—On the 12th instant, he was seized with headache, nausea, flatulent discharge from the stomach, and diarrhœa. Dreading an attack of cholera morbus, he was advised to sacrifice liberally to Bacchus; and this counsel he has not failed most religiously to observe; yet, it is a little singular, and perhaps illustrates the effects of fear on the nervous system, that he could never make himself intoxicated, though he has drunk to the extent of a bottle and a half of spirits in one day. The patient is at no loss for an explanation of this curious fact, saying, that the liquor was carried off by perspiration, as fast as he poured it in. He vomited this morning, and had three stools in the afternoon; tongue clean; some thirst; no pain of abdomen; pulse 88, full and strong.

Ten grains of calomel immediately; an ounce of salts to-morrow morning.

16.—Seven copious offensive evacuations: he complains only of headache and thirst, but has had gonorrhœa for nearly a month.

Transferred to the surgical ward.

As a contrast to the above, though not strictly connected with the subject, the following case of delirium, produced by swallowing a quart of gin, may be here introduced:

Thomas Moore, aged 33, east of the Cape 4 years.

December 3, half-past 5 P. M.—His pupils are dilated, and the iris contracts very sluggishly and imperfectly; conjunctivæ slightly vascular, as if from weeping; yet there is a constant smirk on his countenance, and, to every question that is asked, he smiles and replies, there is nothing the matter with him. He wishes to quit the hospital, and has more than once struggled to escape from his attendants; he frequently applies his hand to the præcordia, but denies he has any pain there; pulse 88, not strong; tongue clean; extremities warm. If he can be depended on, he has had three stools today, the first about one o'clock; soon after which, he was attacked with vomiting and vertigo; fell back on a form insensible; and was brought to hospital.

Of salts, two ounces; infusion of senna, six ounces; let him take an ounce every hour until they operate.

4.—He vomited about ten o'clock last night, and has since been freely purged; evacuations of a dark colour; pupils of natural size; vascularity of conjunctivæ gone; has tremors of the limbs and of the tongue, when protruded.

Intermit medicine.

5.—Five or six stools; tongue not quite clean; tremors of hands not so severe as to prevent the pulse being counted, which was the case yesterday; pulse 80.

6.—Tremors quite gone.

Discharged.

The cases of vomiting were generally accompanied with headache, constipation, and violent pain of abdomen. I subjoin a severe example:

Samuel Burgh, aged 23, subject to epileptic fits, east of the Cape four and a half years.

December 4, half-past 5 P. M.—A little before three o'clock he was seen, in barracks, retching most violently, and complaining of excruciating pain in the abdomen and thighs, and of headache. Nothing more could be learnt from him, than that he had been suddenly attacked, and that his bowels were confined. Pulse full and frequent. A scruple of calomel given was almost immediately rejected. Half an hour afterwards, on being brought to hospital, he took the same quantity of calomel, and had an enema of salts and senna. He has retched much, but vomited none since; and the enema came away without any feculent matter. For some time he lay quiet, disregarding external objects; but just now, he starts up in violent convulsions, laying his hand on his abdomen, and bellowing with pain; pulse 134, full and strong; pupils dilated.

Venesection.

Half-past 6 P. M.—Forty-eight ounces of blood were taken, with no decided relief to the pain of abdomen; but he now answers questions; retching continues; pulse still full and frequent, not quite so strong; tongue clean and moist; great thirst. The first cupful of blood is very buffy.

A warm bath, and, should the retching continue, a blister to the epigastrium. Of infusion of senna six ounces, Epsom salts two ounces, let him have an ounce every hour till they operate.

5.—He obstinately refused to take more than one dose of the cathartic solution; vomited about twelve o'clock; and has had one large stool during the night; slept little, but has lain very quiet; still complains of pain in the feet, legs, and abdomen; to the last of which a blister has been applied; pulse 72, full and strong.

Let him be forced, if he again refuses, to take the medicine ordered yesterday.

6.—Five stools, the last of them brown, and not fœtid; has weakness in the knees and thirst only; tongue clean; pulse 76.

Intermit medicine.

7.—Three scanty stools yesterday. Took an ounce of salts this morning, which has not yet begun to operate; has slight pain of left leg, and weakness of both.

8.—Three stools; tongue foul; no pain, but weakness of leg.

9.—Two stools yesterday; appetite good.

11.—Discharged.

The following are a few specimens of what have been designated in the table *signa anomala*.

Mrs Hannah Seed, aged 36, a very corpulent laundress, east of the Cape 5 years.

December 3, 1 P. M.—Breakfasted with a good appetite; but, about an hour ago, remarked to her husband, that she felt much indisposed, and, a moment after uttering a loud shriek, drew her knees rapidly towards her abdomen, and performed other apparently convulsive movements. She continued to scream and to struggle until brought to hospital. Her face is flushed; her eyes wild; she points to the abdomen, as the seat of her sufferings, and can bear pressure on no part of it; pulse 116, full and strong; extremities warm; bowels not opened since yesterday; this instant vomits, for the first time, a colourless fluid; tongue foul. Unwell a week ago.

Venesection; warm bath; 10 grains of calomel.

Half-past 1.—The arm was tied up, after 32 ounces of blood had been drawn, as the pulse became weak, and the upper extremities covered with a cold perspiration; she lies, for a few minutes, with her eyes shut, then raises the eye-lids, rolls her head on the pillow, passes her hand rapidly across the epigastrium, exclaiming, "Oh, my belly!" and again sinks into a temporary stupor; at the end of which the same gestures are repeated. One moment she talks rationally to her husband, and, the very next, desires a bye-stander, in his presence, to go seek him in the barracks. She complains of headache, and says she was attacked yesterday week with pain, and a sense of weight in the stomach, which lasted four days: acknowledges that she took a glass of rum in her tea this morning; pulse 94, and tolerably strong. The bath is ready.

5 P. M.—She was kept ten minutes in the bath, and perspired copiously on quitting it; has since alternately dozed for a few minutes, and tossed about in bed, complaining of pain in the abdomen; but this she describes as less severe than previous to the use of the bath; has frequently vomited a thin yellow fluid; tongue still co-

vered with a brown fur; no alvine discharge since admission; pulse 100, of good strength.

Let her take ten grains of calomel, and have an ounce of salts, by enema, every two hours, till they operate,

4, Mid-day.—One enema only was required, and she has had a considerable number of dark feculent stools. Slept towards morning; complains very little of her head or stomach; has vomited once to-day, pulse 88; tongue a good deal cleaner.

Five grains of calomel.

8 P. M.—She has rejected every thing taken since last report; yet the tongue is perfectly clean, abdomen free from pain, and præcordia sore, only from the straining to vomit; thirst diminished; pulse 80; two scanty stools.

An enema of salts, and senna immediately.

5.—No return of vomiting; bowels were open before 11 P. M., not since; complains only of debility and anorexia.

Intermit medicine.

6.—Her bowels continuing confined, an ounce of salts was given early this morning, and she has had several copious feculent stools.

9. Discharged.

William Staples, aged 28, a strong muscular man, who never knew sickness, east of the Cape 5 years.

December 4, 6 P. M.—Went to bed yesterday in perfect health; but had occasion to rise twice in the night, a thing quite unusual with him. He could not breakfast this morning, but swallowed instead a glass of arrack, which, as well as a dose of salts, taken soon after, was instantly vomited. At half-past nine, he was attacked with headache, vertigo, pain, and loss of power in the limbs, nausea, and pain of abdomen. A medical gentleman saw him at eleven o'clock, took 50 ounces of blood from his arm, and ordered him a draught, consisting of three grains of emetic tartar, and an ounce of Epsom salts. He vomited it as soon as taken, but has not vomited since. He was much relieved by the bleeding; but his abdomen is still tender; headache, vertigo, and nausea continue; thirst urgent; pulse 112, and full; tongue foul; two copious watery stools since admission.

Ten grains of calomel now, and an ounce of salts in half an hour; if he vomits them, let an enema of salts and senna be exhibited.

5.—Retained the medicines, and had two copious offensive stools; slept well; no headache; pulse 130, of moderate strength; tongue tolerably clean; thirst continues; pain of abdomen not quite gone.

Half an ounce of Epsom salts, and two ounces of infusion of senna.

6.—One stool only; pulse 106; tongue foul; no pain of abdomen, or other complaint.

Ten grains of calomel now, and an ounce of salts at mid-day.

7.—Two stools yesterday; tongue cleaner; pulse 86; debility.

Intermit medicine.

9.—Discharged.

James Wynne, aged 31, east of the Cape 11 years.

December 4, half-past 6 P.M.—Went out as orderly at one o'clock, carrying dinner to the soldiers on the Main and *L'église* guards; in his way home, he met a comrade, and told him, he could walk no farther, from pain and weakness, commencing in the feet, and gradually ascending to the trunk; he felt nausea and general uneasiness, but recollects nothing more till he found himself in hospital. He sat down on a form to describe his complaints, and, on getting thus far, fainted. On recovering, he complains of pain and weakness in the large joints, and of pain in the occiput; retches frequently, and rejects a small portion of mucus; bowels not open to-day; he had two motions yesterday, and, though he did not attend to their appearance, believes them to have been natural.

Ten grains of calomel now, half an ounce of salts, and two ounces of infusion of senna in an hour; if he vomit these, let him have an enema of salts and senna, and a blister to the epigastrium.

5.—Did not reject the medicines; two liquid, not very copious stools; tongue foul; pulse 72, of moderate strength; thirst and pain in the occiput and abdomen, none of them very severe.

Of infusion of senna six ounces, sulphate of magnesia one ounce, let him take an ounce every hour until it produce its full effects.

6.—Seven or eight stools yesterday, of a whitish colour; tongue still foul; pulse only 56, of good strength; headache remains.

Ten grains of calomel; a blister to the nape of the neck.

7.—At six last evening he complained of pain in the abdomen, had had only two scanty stools during the day; an enema of salts and senna was exhibited; he has since had two copious stools, and complains now neither of head nor abdomen; pulse 74; some appetite.

Intermit medicine.

13.—Discharged.

Richard Williams, aged 45, east of the Cape 14 years.

December 13.—His present employment is to superintend the cutting of drains by government slaves; and, in going to the place where he performs this duty, about an hour ago, he was attacked with pain, and so great weakness of the back, loins, and extremities, that he was only prevented from falling to the ground by a passenger, who caught him in his arms. He now complains of severe headache and numbness, confined to the left side and left extremities; he can readily move the parts affected, but halts and totters in his gait; thirst; foul tongue; no nausea; one natural coloured stool this morning.

Venesection; an ounce of salts and two ounces of infusion of senna.

Evening.—Thirty-two ounces of blood were taken, and he felt immediate relief to the headache and affected side; still the first continues considerable, and he has slight numbness of the left extremities; pulse 104; five or six copious stools.

Repeat the salts early to-morrow morning.

14.—Salts have operated three times. He has, it seems, been subject to tremors of the hands for two or three years; headache is his only other complaint.

15.—Headache gone; debility.

28.—Discharged.

Richard James, aged 24, east of the Cape 4 years.

December 26, half-past 1 P. M.—At morning parade he was seized with great numbness of the limbs, and a slightly painful sensation like the pricking of needles, which commenced in the toes and fingers, ran up the extremities and trunk, and, on reaching the forehead, terminated with a flash of fire from the eyes. He was obliged to support himself on his comrade, and, immediately after parade, (7 A. M.), passed a very loose stool. For about an hour he had great vertigo and headache, the last remaining until he was brought to hospital. At 11 o'clock, he was attacked with nausea, retching, and pain of præcordia; and at 12, with a troublesome, but not very frequent cough. Just now, he begins to complain of violent pain about the umbilicus; tongue clean; thirst urgent; pulse 132, of moderate strength; skin dry.

Venesection; ten grains of calomel now, and an ounce of salts at 5 o'clock.

7 P. M.—Thirty-two ounces of blood were taken, without the slightest relief to the symptoms. Half an hour after taking the salts, he had a copious stool and began to vomit; he vomited thrice a large quantity of a green bitter fluid, and has since been a great deal better; pain of abdomen comparatively slight; cough less frequent and less severe; pulse 132; tongue clean and moist; thirst urgent; numbness, without pricking, of hands and fingers.

Acidulated rice water for drink; six drachms of salts early to-morrow morning.

Vertigo, slight pain of abdomen, and general debility, continued a few days longer; the cathartics were repeated; and he was discharged well on the 2d January.

In the fatal form of the disease, the chief remedies employed were blood-letting, the warm bath, spirituous and dry frictions, rubefacients, the internal exhibition of spirits, opium, calomel, Epsom salts, and other purgatives. The extraordinary success of Mr Sheppard, in treating a similar disease by blood-letting to syncope, as reported in Dr Johnson's work on tropical climates, induced me to practise it on the two first patients attacked; but from neither of them, though veins were opened in each arm, could more than twelve ounces of uncommonly dark blood be obtained. Mr Markham tried it with no better success in two other cases. It was also tried, as we have seen, in some of the less violent affections; and, the impression produced on me by the whole is, that when only a few ounces can be obtained, their abstraction accelerates the fatal event, and, when blood-letting can be carried to syncope, the disease is curable without it.

Opium seemed, in many cases, to prevent the action of other remedies, by causing a torpor of the intestines; and the warm bath contributed to the same effect, by diverting the fluids to the external surface. The first, I think, ought never to be exhibited after vomiting has ceased; nor the second, unless the skin is dry and the cramps very severe.

The cold, arising from their evaporation, appeared to counteract the stimulant effects of the spirits employed in friction; they were soon dropped altogether, and warm flannel substituted, particularly during the spasmodic paroxysm, but friction of no description ever obviously contributed to restore the natural warmth. Cataplasms of mustard, garlic, and capsicum, beat up into a mass, with spirits of hartshorn and vinegar, were suggested by Dr Burke, and sometimes applied to the praecordia and extremities; but in one case only produced the smallest rubefacient effect.

At the commencement of the disease, spirits were very liberally administered, both in the form of draught and enema; most of the patients swallowed them with great reluctance, and rejected them immediately, even when combined with tincture of opium.

Though aware that calomel had been recommended in the cholera of India, the astonishing rapidity of its course prevented me from thinking of that medicine in the two first cases that occurred. Observing, however, that bile was absent in the egesta and in the alimentary canal of every patient I had seen; that one man, after overcoming the first symptoms, passed nothing else; and, lastly, that every other remedy had turned out either useless or prejudicial, I resolved to try calomel, and to throw it in with a precipitance which the nature of the disease seemed to justify, in the unhappy case already detailed. That patient was considered convalescent on the 6th December; and, before the 14th of the same month, when the sanguine expectations I had been led to entertain of his recovery were exchanged for the bitter certainty of his approaching dissolution, five other cases had been admitted, and treated nearly in the same way. Two only were salivated, and recovered; but one of those, alluded to in describing the symptoms, shared the fate of poor Reed, and died on the 12th day. The other took twelve scruples of calomel, of which probably a considerable quantity was vomited; his ptyalism was by no means severe; and he was discharged nine days after admission.

From all I had seen of the symptoms, and all I could find on dissection, it now appeared to me that mercury was the only known remedy on which any dependence could be placed; at the same time, that I had lamentably mistaken the proper mode of introducing it into the system. Instead of a scruple every two hours, I now gave that quantity on admission, and repeated it as often as rejected by vomiting: when one scruple had been retained five grains were given every hour. Out of six cases, treated on this plan, two recovered, though in neither of them the mouth became affected.

By referring to the table of morbid appearances, it will be seen that, previous to the employment of calomel, there was never observed the slightest trace of bile in the alimentary canal (1. 2. 3. 4.); that in the two patients, who died on the 12th day, there was bile in every part of its course (5. 7.); that, in others, who had taken large quantities of that medicine, there was bile *confined to the upper part of the small intestines*; and that again, when calomel came to be more cautiously administered, either very slight (11.) or no traces of bile were found (10. 12. 13.)

The renewal of the secretion of bile, which is evidently suspended in this disease, I consider to be our grand object in the treatment; but the safest and most speedy method of accomplishing that object, when it is possible, my limited experience does not enable me to point out.

Another desideratum in the treatment is a method of suppressing vomiting that would not interfere with the action of other remedies. Opium, calomel, and sulphuric acid, separately or combined, are inadequate to this effect: abstinence from liquid ingesta might perhaps answer, if one patient in twenty could submit to the torture of that privation.

Purgatives were generally exhibited, by enema, soon after admission, and by draught, the moment there was any probability of their being retained. Sulphate of magnesia and the infusion of senna were preferred; but the cathartic tinctures, also, were very frequently administered in the form of enema.

Sometimes, immediately after recovery, the evacuations consisted of a deep grass-green fluid, of the consistence of a thin jelly.

Of the multiform, but less severe varieties, which the epidemic assumed, the simplicity of the treatment was only authorized by its unvarying success. Ten grains of calomel, or, when the vomiting was severe, a scruple, followed, at the distance of some hours, by an ounce of salts, with or without infusion of senna, and once or twice repeated, cured almost every case. Most of the instances, in which blood-letting was resorted to, have been given at length: we have seen that it seldom produced any decided relief until the bowels had been freely opened; and I am inclined to think, it might always have been very safely dispensed with. When considerable debility and anorexia survived all the other symptoms, the patient used to be brought round, in a few days, by one of the bitter infusions, mixed with a small proportion of the compound tincture of bark.

The length to which this communication has insensibly extended will deter me, for the present, from entering into any speculation regarding the exciting causes of the disease; but I cannot withhold the following summary of facts, connected with its origin and progress.

1st, On the 5th September 1819, a soldier was sent from the main guard to hospital, affected with great thirst, constant vomiting, violent cramps in all his limbs, coldness and lividity of the legs and hands, a small pulse, and confined bowels. (Mr Markham's diary.)

2d, On the 6th September, a black, under the care of a French surgeon, died with all the characteristic symptoms of the epidemic.

3d, On the 29th October, the Topaze, a 46 gun frigate, anchored in this harbour, from Ceylon, after a very unhealthy voyage, during which several men had died of cholera morbus. The following day, she sent thirty cases of chronic dysentery, hepatitis, and general debility, to the hospital of the 56th regiment. *

4th, On the 18th November, cholera first appeared, in its most severe form, among the African slaves and Indian convicts; several of whom were that day admitted into the civil hospital.

5th, A few days afterwards, a European sailor, under treatment, I believe, for ascites, in the same hospital, fell a victim to the reigning disease.

6th, On the 29th November, the first fatal case occurred in the 56th regiment.

7th, Though the disease originally broke out in Port Louis, it afterwards visited the principal outposts and habitations in the island; and, soon after running its course here, appeared at Bourbon, in defiance of a most rigorous quarantine.

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* I have the surgeon of the frigate's authority, as well as personal observation, in stating that not one of those patients laboured under symptoms of cholera at the time of disembarkation; but it should not be concealed, that a medical officer, who had gone on board the same forenoon, saw one man affected with severe vomiting and spasms.

8th, A considerable number of sailors, belonging to merchant vessels lying near the shore, died of cholera; whereas, not a soul belonging to the Topaze, which lay about a mile and a half from shore, but communicated constantly with it, was attacked after her arrival.

9th, With the exception of Reed, (p. 7,) no patient or hospital attendant was attacked at head quarters; this I understand was far from being the case at an outpost seven miles from town.

Lastly, No children, and a very small proportion of females, were attacked; but convulsive affections, resembling hysteria, were unusually frequent among the European and Mulatto women belonging to the regiment.

I have the honour to be, Sir,
Your most obedient, humble servant,
John Kinnis, M. D.

Port Louis, 31*st March* 1820.

II.

OUTLINE OF AN INQUIRY ON THE PATHOLOGY OF CONSUMPTIVE DISEASES.

By John Abercrombie, M. D.

PART I.

Death from consumption in the British Islands has been estimated, on the most moderate computation, at one-fifth of the whole mortality, and there is much reason to fear that the evil is increasing.[*] The subject, therefore, is one of intense interest; and it seems most desirable that every effort should be made to enlarge our acquaintance with the pathology of the disease, in the hope that something may be done to diminish in some degree this frightful mortality.

The history of consumption presents a melancholy picture of the uncertainty of medical observation. While the extensive mortality excited the eager attention of physicians in every age, a great variety of remedies, and various modes of treatment, were from time to time proposed. The most flattering testimonials were given of their efficacy, and numerous cases were detailed, which, after having exhibited all the usual symptoms of consumption, terminated favourably. Yet each of these remedies, after enjoying an ephemeral reputation, has either forfeited the public confidence, or sunk entirely into oblivion. A slight review of them is calculated to throw considerable light upon this inquiry. *

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[*] In great cities, the proportion is higher. In London, it has been generally reckoned about a fourth, and sometimes nearly as high as a third.

The oldest, and perhaps the most extensive, treatment of consumption was upon the Tonic plan. The remedies of this kind that were chiefly relied on were, light and nourishing diet, friction, cold-bath, exercise, sea-voyages, preparations of iron, and various medicines of an astringent or stimulating kind, such as guaiacum, seneka, the balsams, and the vegetable bitters. Hippocrates seems to have relied chiefly on exercise, in regard to which he directs, that it should be gradually increased to the extent of walking ten or fifteen miles a-day. Aretæus and Celsus advise nearly the same remedies, with very particular directions about diet. Their chief dependence seems to have been on sea-voyages; but Celsus also attaches much importance to walking, friction, and bathing. Galen appears to have relied chiefly on bathing, and his directions are long and very minute, in regard to various modes of using it, adapted to different modifications of the disease, especially to the different states of hectic fever. In one case, general immersion is recommended; in another, cold water applied only to the thorax; in a third, a poultice of herbs, moistened with snow-water; and a fourth method is described with great minuteness, in which warm air is first employed, then warm water, and, lastly, cold water.

In the long period during which the opinions of Galen regulated the medical schools, the same mode of treatment prevailed; and at a more advanced period, when the pathology of the disease came to be better understood, there were added to the general plan remedies of a detergent nature, as they were called, or such as were supposed to cleanse and heal the ulcers of the lungs. Of these the most esteemed were, various preparations of sulphur, balsamic fumigations, myrrh, sarsaparilla, cinchona, preparations of mercury and antimony, balsam of Copaiva, and chalybeate waters. During the period to which this outline refers, various other remedies are mentioned by individual writers, many of them of a superstitious kind, and others altogether

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* See the learned and valuable work of Dr Young.

frivolous; but, upon the whole, it appears that the prevailing treatment of consumption was upon the Tonic plan, from the days of Hippocrates to the middle of the seventeenth century; and, about this period, the judicious Sydenham did not hesitate to affirm, that "neither mercury in syphilis, nor bark in intermittents, is more effectual than riding in consumption, provided the patient take care to have his linen well aired, and to continue his journey long enough—the longer as he is the more advanced in life."

About the beginning of the eighteenth century seems to have commenced that revolution in medical opinion on this subject, by which the treatment of consumption was changed from the tonic to the antiphlogistic plan. Traces of it, indeed, are found at an earlier period; but it seems to have been about this time that it was brought into general notice, chiefly by the writings of Stahl and his followers. The remedies employed under this system were those calculated to allay vascular action, as repeated small bleedings, antimonials, and other nauseating medicines, emetics, mineral acids, nitre, cicuta, anodynes, and cool spare diet. Sea-voyages were still in repute, but their efficacy was ascribed to the slight and continued nausea. The tonic remedies and balsams, formerly in use, were now condemned, from a dread of exciting febrile or inflammatory action. The chief promoters of the antiphlogistic plan seem to have been Stahl, Dover, Huxham, and Bryan Robertson; and of writers of a later date, we are to reckon in this class the distinguished names of Pringle, Monro, Van Swieten, and Cullen.

During the period, however, to which these observations refer, there were many physicians of no small note, who retained an attachment to the tonic treatment of consumption. Among these may be reckoned Barry, De Haen, Marryat, and others, —and among those of later date, Salvadori, May, and Rush of Philadelphia. Salvadori treated consumption by violent exercise, with a liberal allowance of salt meat and wine. May considered it as being entirely a scrofulous disease, to be treated like any other scrofulous ulceration, by tonics, and nourishing diet. Rush contends that consumption is a disease of debility, except some cases in which there are inflammatory symptoms, and his remedies are, a great deal of exercise, bathing, bark, and iron. "The hardships of a military life," he says, "have effected cures in many cases of confirmed consumption, and a riding postman has been relieved more than once by a pursuit of his occupation." Frank also was an advocate for the treatment of consumption by tonics and nourishment; but, upon the whole, the antiphlogistic plan seems to have been the more prevalent, from the beginning of the last century, till near the end of it, when many of the remedies formerly in use were in a great measure lost sight of in this country, under the growing fame and indiscriminate use of digitalis. In regard to the efficacy of this medicine, there was indeed some difference of opinion among the great number of physicians who employed it, but by some it certainly was considered as nearly a specific, in the incipient stages of consumption; and by one writer it was reported, after a very long trial, to have cured forty cases out of seventy-two, taken indiscriminately at all stages of the disease. It is unnecessary to remark how far this active remedy has lost its reputation in consumptive cases. It may be given occasionally as a palliative, perhaps sometimes as a placebo, but I believe no person in the present day expects it to cure consumption.

On reviewing the mass of observations that have been transmitted to us by the various writers now referred to, we find numerous cases which terminated favourably, after they had exhibited all the usual symptoms of consumption; some of them in circumstances which appeared to be hopeless. Some of these recoveries took place under the most active antiphlogistic treatment; others under the use of tonics and nourishing diet, and not a few with little or no medical treatment, or under the employment of remedies altogether inert and frivolous. From such various and contradictory evidence, on the authority of writers of sound observation and undoubted veracity, what conclusion can be drawn by an unprejudiced inquirer, but that, under the name of consumption, there have been included affections, differing widely from each other, and requiring different, and even opposite modes of treatment;—and that there are disorders which assume many of the symptoms of this alarming disease, while they are in their nature widely different. The inquiry is extensive and most important, and it opens an interesting field of research, in which, though it may appear unpromising, there is certainly the hope of doing something that may ultimately tend to diminish the mortality from chronic affections of the lungs.

By pulmonary consumption, we understand an ulceration of the substance of the lungs of a peculiarly unhealthy character, little, if at all, disposed to heal; and the symptoms which are considered as indicating the presence of it are cough, purulent expectoration, hectic fever, and emaciation. But when we come to investigate the subject minutely, we find reason to believe that there are various affections which present many or all of these symptoms, while they are in their nature remarkably different from consumption; and that they may even be fatal after long protracted disease, and yet the substance of the lungs be found perfectly healthy. On the other hand, we find the true consumptive ulceration running its course, with considerable varieties in the symptoms, and while some of the ordinary symptoms are entirely wanting. The subject, therefore, resolves itself into two parts:—I. The Diseases which resemble Consumption—II. The true consumptive Ulceration.

PART I.

OF THE DISEASES WHICH RESEMBLE CONSUMPTION.

When in a young person, about the age when consumption generally appears, and especially in a family which has already suffered from it, we find cough, with uneasiness in breathing, pain referred to some part of the thorax, frequency of pulse, and general weakness,—and these symptoms going on for some time, so as to assume a chronic form,—we naturally take the alarm, and dread a tendency to consumption. These symptoms, however, may arise from various other affections, some of them as untractable as true consumption, but others affording a more favourable prognosis, and frequently requiring a treatment considerably different. They may be referred to the following heads:

I. Sympathetic Cough, (so called.)
II. Irritation of the Diaphragm by Diseases of the Liver, Spleen, and other parts contiguous to it.
III. Chronic Inflammation and Ulceration of the Larynx.
IV. Chronic Disease of the Mucous Membrane of the Bronchiæ.
V. Chronic Inflammation of the Pleura.
VI. Disease in the Posterior Mediastinum, or the Glands connected with the Lungs.
VII. Ulceration of a Healthy Character from Active Inflammation.
VIII. Hæmoptysis and its Consequences.

SECT. I.—*Of Sympathetic Cough.*

This indefinite term I employ merely for the sake of a name, and to include under it certain anomalous cases, in which obstinate cough has been supposed to arise from causes seated in organs at a distance from the lungs. I forbear from speculating upon the connection; some of the facts are curious. Valsalva describes a case in which the only morbid appearances were in the brain. The peculiar symptom was, that every motion of the head produced a paroxysm of cough. A case somewhat similar is described by Lechelius. Lieutaud relates a fatal case of violent cough, with purulent expectoration, in which the only morbid appearances were in the frontal and occipital sinuses, which were full of pus. Sauvages mentions obstinate cough arising from irritation of the auditory passages, especially the Eustachian tube. "I have never," says De Haen, "observed a more severe, obstinate, and untractable cough than that which affected a young woman, and, having resisted every remedy, ceased after the expulsion of a callous substance from the uterus." Worms in the intestines have been considered by many practitioners as a cause of cough. Every one is familiar with the term *nervous cough*. It is, in general, employed to express any chronic cough that is not consumptive; but of these, we shall afterwards find, there is great variety. But there is a nervous or hysterical cough, which we cannot refer to any of these causes. One of the most singular cases that I have seen of this kind occurred in a young lady, stout and plethoric. She was affected with the most violent cough I ever observed, which occurred in paroxysms, and continued for an hour or more at a time, until respiration was nearly suspended, and the attack often terminated in a state bordering on asphyxia. The paroxysms occurred only once in four or five days, and in the intervals she was in perfect health. After resisting various remedies, it was removed by full bleeding from the arm.

Cough is often supposed to arise from the *stomach*. The subject is extremely obscure, but by no means unworthy of attention. * We know, that, in persons liable to asthma, the paroxysm may be induced by indigestion; and there certainly are cases of cough, which, after resisting the usual remedies, yield to treatment directed to the stomach and bowels. A case of this kind, which had attracted much attention, has been communicated to me by a professional friend. It occurred in a gentleman between 50 and 60 years of age, and was a peculiar, loud, noisy cough, which had considerably reduced his strength, and for a long time resisted every remedy. It disappeared at last under a course of laxatives. The same kind of cough is uniformly induced in this gentleman by any inattention to diet by which his stomach is disordered, and yields only to the same treatment. A man, mentioned by Langelot, was affected with incessant dry cough, and, at length, wasting and death. The case was considered as decidedly phthisical, but the lungs were found perfectly healthy. The only morbid appearance was in the stomach, which appeared to have been affected with chronic inflammation. *

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* See the valuable work of Mr Abernethy on the Constitutional Origin of local Diseases; and Dr Wilson Philip on the Dyspeptic Phthisis, in Med.-Chir. Trans. Vol. VII. p. 499.

In young women, especially of the higher ranks, a state is met with which is very apt to excite the alarm of a tendency to consumption. The patient is found pale, sallow, listless, and inactive, with bad appetite, disturbed sleep, and a small, frequent pulse. There is frequently nausea, especially after eating, and a feeling of oppression or exhaustion across the epigastrium; sometimes a more fixed uneasiness in one side, about the margin of the ribs, increased by cough and by full inspiration. There is a short dry cough, and the breathing becomes quick and uneasy upon any exertion, as going up a stair or an ascent. There is a feeling of coldness sometimes alternating with the flushes of heat. The bowels are generally costive, sometimes obstinate; the menses often retained, suppressed, or very scanty; but the affection, I believe, is not necessarily connected with the state of menstruation. It is treated successfully by country air, gentle exercise, and a combination of tonics with gentle laxatives. I have found nothing more useful than sulphate of iron, combined with aloes, taken three times a-day, in doses of two grains of the former with as much aloes as shall keep the bowels fully open, without purging. The other preparations of iron, and the vegetable bitters, may be used in the same manner. The abdomen is sometimes enlarged, and the affection seems to be connected in a great measure with derangement of the muscular action of the intestinal canal, especially the colon. It is not to be removed by strong purgatives, but by the combination of gentle laxatives with tonics. Friction of the body is also useful, with warm clothing, tepid bath, or sponging with vinegar and water, at first tepid, afterwards cold.

There is also met with, especially in young females, a fixed pain in the side, about the margin of the ribs, often increased by inspiration, sometimes accompanied by cough, and occasionally by considerable oppression in breathing, occurring in paroxysms, not unfrequently with hysterical symp-

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* Miscell. Curiosa. An. 1675. Obs. 14.

toms. It is in many cases extremely obstinate, and is apt to be referred to the liver, the spleen, or sometimes to the lungs. I have seen reason to believe that the seat of it is often in the arch of the colon; and, after having resisted a variety of active treatment, I have found it yield to the combination of tonics and gentle laxatives, as sulphate of iron and aloes, with extract of hyoscyamus.

SECT. II.—*Cough from Irritation of the Diaphragm, by Diseases of the Liver, Spleen, &c.*

Cough, and uneasiness in breathing, are frequent attendants on diseases of the liver, both acute and chronic. It is when the disease in the liver is not the prominent symptom, that the case comes to be of importance in connection with this inquiry. The cough, in such cases, is at first dry, but whenever there is a frequent irritating cough, from whatever cause, there comes to be an increased secretion from the bronchial membrane, produced by the irritation. Hence, there may be considerable expectoration, and even sometimes bloody.

CASE I.—A lady, aged 35, had severe cough, with considerable expectoration; dyspnœa, which was sometimes severe, especially in the night; pain of the chest and side; frequent pulse; restless nights, with feverish paroxysms and morning sweats. The expectoration was viscid, frequently with a mixture of puriform matter, and occasionally of blood. In addition to these symptoms, she was liable to periodical fits of vomiting, which attacked her generally in the evening, and pain, which was referred to the left side of the abdomen, about the region of the spleen; but no disease could be detected, either there or in the liver. These complaints went on for upwards of two years, without materially reducing her, or impairing her strength. But, in the third year, her strength began to fail. She had then diarrhœa, anasarca, and gradual emaciation, and died exhausted about three years from the commencement of the complaint. Towards the end of her life, the vomiting became less frequent, but the severe rending cough continued, with copious expectoration, and severe fits of dyspnœa. On dissection, no morbid appearance could be detected in the lungs, or in any part of the thorax. The spleen was enlarged and hard. On the upper surface of the liver there was a considerable tumefaction, the surface of which was studded with small hard tubercles: it protruded against the diaphragm, and pressed it upwards. But though the diameter of the liver was thus considerably increased at this part, it did not appear to project downwards from its natural situation. The other viscera were healthy.

This case is the most remarkable example of the kind that has occurred to me, and it shows strongly how much the symptoms may assume the appearance of an affection of the lungs. The only peculiarities were the fits of vomiting, the cough being louder and more noisy than the ordinary cough of consumption, and the length of time during which the symptoms continued without impairing her strength. Many cases of a similar kind are on record. In a case by Portal, similar symptoms were connected with scirrhus of the pancreas, and disease in the mesenteric glands, without any morbid appearance in the thorax. The symptoms were, frequent cough, slight fever, gradual wasting, and at length death, without any other prominent symptom. In a case by Bonetus, similar symptoms were connected with disease of the spleen; and, in another, by the same writer, the only morbid appearance was in the right kidney, the lungs being perfectly healthy,—there had been cough for two years, and gradual wasting. In a case by Morgagni, there was a tumour, which weighed lb. i. attached to the posterior part of the stomach. The symptoms were, dry cough, difficult breathing, loss of appetite, and watchfulness. A young woman, mentioned by Laennec, had cough, dyspnœa, copious expectoration, hectic fever, and great wasting. After the symptoms had gone on for some time, and she was considered as decidedly phthisical, she was seized with violent pain in the epigastrium, and soon after discharged, by stool, an immense quantity of hydatids. From that day she recovered, and was soon well.[*]

In the cases now referred to, the pectoral symptoms seem to have arisen from mechanical irritation of the diaphragm. But there is another way, in which an affection, resembling consumption, arises from disease of the liver. The upper surface of the liver is attacked by inflammation, which terminates in an abscess, the inflammation extends through the diaphragm to the pleura, and an adhesion takes place betwixt the diaphragm and the lower part of the right lung. The matter from the abscess making its way upwards, passes, by means of this adhesion, into the bronchiæ, and is spit up. Cough, with purulent expectoration, then continues, and may either wear out the patient with all the usual symptoms of consumption, or the abscess may gradually heal, the expectoration at the same time gradually diminish, and the patient recover. If a case of this kind be seen from the commencement, it is in general easy to distinguish the nature of it, but, at an advanced period, it has very much the appearance of consumption. This affection is illustrated by the two following cases:

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[*] Laennec, L'auscultation Mediate, Tom. I. p. 278.

Case II.—A lady, aged 40, had been affected for some months with uneasiness in the region of the liver, when, on the 5th of October 1815, she was seized with violent pain there, and vomiting. By the usual remedies, she was much relieved, but some degree of uneasiness continued for several weeks. It then seemed to subside, but, after a short interval, returned with violence, accompanied by vomiting, and fits resembling syncope. The whole region of the liver was tense and tender to the touch, with evident enlargement. The pulse varied, being sometimes frequent and small, and sometimes quite natural. A variety of practice was now employed with little relief,—the pain was at times so violent, that, for many nights together, she was unable to lie down in bed. These paroxysms alternated with intervals of ease, but by the repetition of them for nearly three months, her strength was very much reduced. In the end of December she began to have cough, with some expectoration, which had a purulent appearance. On the 14th of January she was seized with a violent fit of coughing, and expectorated purulent matter to the amount of at least lb. ij. On the 15th, she expectorated, in the course of the day, at least lb. i., and about the same quantity on each of the two following days. The quantity then diminished considerably until the 25th, when she again brought up about lb. i., and the same quantity a few days after. The enlargement in the region of the liver then subsided, and from that time there was no great discharge, but she continued to have cough, with purulent expectoration, as in a case of consumption, with great weakness and emaciation. These symptoms continued for several weeks; the expectoration then began to diminish, and gradually ceased. She recovered her strength, and, by the end of May, was free from complaint. She has enjoyed good health ever since.

Case III.—A soldier had an attack, which was considered as peripneumony, and was accompanied by pain in the lower part of the right side. It terminated in purulent expectoration, with wasting, and colliquative diarrhœa, and he died in three months. On dissection, there was an abscess, three inches in diameter, in the upper part of the liver, a strong adhesion of the right lung to the diaphragm, and a sinus, six inches long, passing through the substance of the lung, and communicating with the abscess of the liver. The lungs were, in other respects, sound.*

In cases such as these, it has been supposed that a diagnosis might be founded on a mixture of bile with the matter expectorated. I observed no such mixture in the former of these cases, and I see no reason for expecting it in all cases, for if the abscess be lined by coagulable lymph, as is likely to be the case, it is cut off from any connection with the biliary ducts.

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* Edinburgh Medical Essays, Vol. I. p. 217.

In regard to the treatment, little need be said. In the early stages, it must be directed to the inflammatory disease in the liver,—in the advanced stages, it must consist in supporting the strength, and favouring the healing of the abscess, by tonics and nourishing diet.

This affection is met with in a less active form, not advancing to suppuration, but continuing, for some time, in what is called a sub-acute state, producing symptomatic cough, and other pectoral symptoms, and distinguished by tenderness in the region of the liver. If taken in time, it yields to treatment directed to the liver, especially topical bleeding and blistering, in the early stages, and afterwards a little mercury, with opium. I have observed it chiefly in elderly people, but it is not a common disease in this country. In these and the other cases of symptomatic cough, as it may be called, the cough is generally louder, and more noisy than in a pulmonic affection, the lungs being more freely inflated than they are likely to be when the cough is connected with disease in the thorax.

SECT. III.—*Chronic Inflammation, and Ulceration of the Larynx, or the upper part of the Trachœa.*

This affection forms the laryngæal phthisis, to which more attention has been paid on the Continent than in this country. It is a disease of not unfrequent occurrence, and of extreme danger, and it presents a most important subject for investigation. The symptoms vary considerably in different cases, according to the seat and extent of the disease, but many of the cases are with great difficulty distinguished from the ordinary consumption of the lungs. There is frequent cough, with purulent expectoration, frequently mixed with blood, gradual emaciation, hectic fever, at last diarrhœa, and death, with the usual appearances of phthisis. But, on dissection, the lungs are found perfectly healthy, the morbid appearances are confined to the inner surface of the larynx, or the trunk of the trachæa, and usually consist of one or more well defined ulcers, sometimes with caries of the cartilages, and sometimes with irregular fungous elevations of the mucous membrane.

The symptoms by which this disease is distinguished from pulmonary consumption are not uniform, and are often obscure.

There is generally a feeling of irritation about the larynx, and sometimes acute pain referred to a particular spot on the larynx or the upper part of the trachæa; in some cases the larynx is painful on pressure; the voice is generally more or less affected with hoarseness, or a peculiar huskiness; in many cases it is much impaired, so that the patient can only speak in a whisper, and sometimes it is entirely lost. The cough is severe; in some cases occurs in paroxysms, almost resembling the paroxysms of hooping-cough, and sometimes it excites vomiting. The proper expectoration is purulent and in small quantity, sometimes mixed with small membranous portions, and often bloody; but it is always to be kept in mind, that when the lungs are much irritated by cough, kept up by any cause external to them, an increased secretion from the bronchial membrane is apt to be produced by the constant irritation, or even the real chronic inflammation of the membrane. Hence the expectoration sometimes consists of considerable quantities of viscid mucus from the bronchiæ, streaked with pus from the real seat of the disease. In many cases the breathing is considerably affected, and this may either be a permanent difficulty with wheezing, or it may occur in paroxysms. These attacks are sometimes accompanied by palpitation, and other symptoms so severe, that the affection has been mistaken for disease of the heart. These symptoms seem to occur chiefly when ulceration is seated in the lower part of the trunk of the trachæa, about the bifurcation; especially if it be accompanied (as it frequently is) by fungous elevation of some of the parts connected with the ulcer. In some cases there is difficulty of swallowing, the attempt exciting pain and paroxysms of cough.

The principal morbid appearances are chronic inflammation and ulceration of the inner surface of the larynx, or the trunk of the trachæa; sometimes with caries of the cartilages, and sometimes with thickening of the membrane and fungous elevations, which considerably narrow the canal. In some cases small abscesses are found. These, however, generally burst before death. In one case, which will be referred to, such an abscess burst externally, but without arresting the disorder. The disease may come on gradually in the form of chronic inflammation, or it may supervene upon an acute attack, ulceration being left as the result of it. In some cases tubercles have been found on the mucous membrane of the trachæa, and the affection has arisen from these passing into ulceration. The disease may be fatal by gradual emaciation, like a common case of consumption; or rapidly by the accession of inflammatory symptoms; or suddenly by suffocation. The prognosis is in all cases extremely unfavourable. Except the disease can be arrested in its first or inflammatory stage, it will probably be fatal. It is therefore of the utmost importance that the first appearance of it be watched with the greatest care, and treated with the greatest decision. The remedies are obvious, though they may be varied a little according to the circumstances of the case. General bleeding may often be required; topical bleeding must be used extensively and repeatedly. The other remedies are blistering, issues, antimonials, very spare diet and perfect rest, purgatives, and perhaps emetics; calomel may be useful in some cases after the first activity is subdued. When the disease has got into the state of ulceration, I cannot say what is the best treatment, or whether any treatment can arrest the progress of it. Those from which we might expect benefit are issues, emetics, opiates, antimonials, warm air, perhaps balsamic fumigations, and preparations of iron, and perhaps in some cases small quantities of mercury with opium. The French believe that the disease has in some cases a syphilitic origin.

Morgagni seems to have been the first who attended to the peculiar nature of this affection. At an early period of his life, a case occurred to him, which had been considered and treated as pulmonary consumption, by the most eminent physicians. The symptoms were cough, with purulent and bloody expectoration, and a fixed pain a little below the larynx, without fever. Morgagni considered it as a disease of the trachæa, and it got well by confinement, rest, regulated temperature, and spare diet. I suspect that the disease in a slighter form is more common than is supposed. I have repeatedly met with cases of obstinate cough which had resisted the usual remedies, and at last yielded to topical bleeding on the larynx. I have formerly described a case of this kind, which occurred in a gentleman about fifty, and was remarkable from the extreme violence of the paroxysms of coughing. They resembled the most violent hooping-cough, and sometimes continued for more than an hour without intermission, until they threatened suffocation or apoplexy. After resisting the most active treatment, the case yielded readily to two applications of leeches to the larynx.* The great importance of this subject will be a sufficient apology for adding some cases illustrating the various modifications of the disease.

Case IV.—A man, aged 33, after sitting in a current of air when much heated, was seized with cough and pain extending from the throat to the breast. After a short time, his voice was much impaired; the cough was violent; the expectoration at first mucous, afterwards purulent; he then had hectic paroxysms, and night-sweats; dull uneasiness of the breast, and rapid emaciation; there was a constant tickling irritation of the throat, and deglutition was painful. His voice at last was entirely lost, and he died completely emaciated in less than three months from the commencement of the disease. *Dissection.*—An ulcer of the superior and middle part of the larynx, occupying half its circumference at the upper part, and extending to the epiglottis; left arytenoid cartilage ossified and carious; surface of the cricoid cartilage covered by red elevations; the membrane covering the right arytenoid was thickened and ulcerated; mucous membrane of the trachæa vascular and thickened; lungs adherent, and some small grey tubercles in them; otherwise healthy.[*]

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* Edinburgh Medical Journal, Vol. XV.

Case V.—A young man, aged 16, after exposure to cold when heated, had headach, pain of the throat, cough, fever, and epistaxis. After a fortnight, he had severe diarrhœa, and tight breathing: cough continued, with thick expectoration, and febrile paroxysms; then great debility, involuntary stools, tenderness of the abdomen, harassing cough, and he died in about a month. *Dissection.*—Pharynx and adjoining parts red; the larynx red, and an ulcer at the base of the epiglottis; the lining membrane and chordæ vocales thickened; behind the arytenoid cartilages, a small opening led into a sac, which had contained pus; lungs healthy; bronchial membrane dark-coloured; inflammation, and some appearances of ulceration of the mucous membrane of the intestines.[†]

Case VI.—A man, aged 39, after pneumonic symptoms, had a tickling sensation in the throat, with constant desire to cough; alteration of voice, and hoarseness; copious expectoration of frothy mucus, with purulent particles interspersed in it; frequent pulse; lassitude; sleep nearly prevented by incessant cough; emaciation. Died in four months. *Dissection.*—Superior aperture of the larynx was diminished by thickening of the membrane; one arytenoid cartilage, and part of the other, destroyed by ulceration; trachæa healthy.[‡]

Case VII.—A girl, aged 19, had cough, difficult breathing, with a peculiar noise, somewhat resembling croup; pulse natural; no debility or constitutional disturbance; ill three months. Died unexpectedly in the night. *Dissection.*—Rima glottidis contracted; posterior part of the inner surface of the larynx occupied by an ulcer; a second ulcer on the posterior part of the trachæa, a little below the larynx; and a third a little lower, which nearly embraced the circumference of the trachæa, and was about one-third of an inch broad; bronchiæ and lungs healthy. *

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[*] Prost. Med. Eclairée par l'observation et l'ouverture des Corps.

[†] Ibid.

[‡] Beddingfield's Compendium of the Practice of Physic.

Case VIII.—A man, aged 34, had cough, with mucous expectoration; pain of the larynx; hoarseness. After some weeks, the cough increased, and the expectoration became purulent; fever, and some dyspnœa. Died gradually exhausted in two months. *Dissection.*—Ulceration of the mucous membrane of the larynx; arytenoid cartilages carious, and covered with pus; lungs and trachæa quite healthy. †—In another man, with similar symptoms, a tumour formed on the fore part of the neck, which suppurated and discharged matter, and left a fistulous opening, which communicated with the larynx. The symptoms were relieved for a short time; but they soon returned; his voice was entirely lost; and he died gradually exhausted. His body was not examined.

Case IX.—A man, aged 49, after the sudden disappearance of glandular swellings of his neck and arm-pits, with which he had been affected for seven or eight months, had cough with tight breathing, and at times a sense of suffocation; frequent pulse; weakness and wasting; after some time he had purulent and fetid expectoration, which was sometimes mixed with frothy and pituitous matter; fits of coughing after meals, which excited vomiting; increasing weakness; afterwards he had habitual dyspnœa, and fits of palpitation; voice hoarse; at length orthopnœa; died in six months. The case had been considered as disease of the heart. *Dissection.*—In the inferior part of the trunk of the trachæa near the bifurcation, there was an ulcer occupying about half its circumference, and about an inch and a half in length; the cartilages denuded and eroded; the ulcer was covered with yellow pus; mucous membrane around it inflamed; some puriform mucus in the bronchiæ; all the other parts healthy, except a very small portion of the lower part of the right lung, which was slightly hepatised, but not to such a degree as to sink in water. ‡

Case X.—A man, aged 39, had dry cough, attacking him in paroxysms, which he neglected for six months; then occasional fits of dyspnœa and suffocation, which usually continued some hours. At first they occurred seldom, but in the ninth month were more frequent. At this time expectoration began, which was glairy and ropy; voice impaired and afterwards lost. In the fourteenth month he began to waste, and had pain in the chest, behind the upper part of the sternum; hectic fever; diarrhœa; fits of dyspnœa continued; expectoration copious but without pus. Died in the last degree of wasting after sixteen months; the fits of dyspnœa having become less frequent and less severe for some time before death. *Dissection.*—Larynx sound; two inches below it, the membrane of the trachæa became red, and the redness became more intense the lower down, until it led to a large and deep ulcer, extending half an inch into the bifurcation on both sides. Its surface was unequal, and covered with various tubercles, white, red, and brown; bronchiæ below healthy; lungs quite sound, except a slight adhesion on the right side. *

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* Beddingfield, ut supra.

† Journal de Med. Tom. IX. An. xiii. New Series, p. 185.

‡ Cayol, Recherches sur la Phthisie Trachéale.

CASE XI.—A woman, aged 50, liable to dyspnœa and hæmoptysis, had constant dyspnœa and wheezing, with exacerbations, which threatened instant suffocation; feeling of heat and tightness behind the sternum; cough occurring in violent paroxysms, with viscid expectoration; voice hoarse; occasional faintings; pulse natural. After some time dyspnœa increased; face livid; was obliged to sit up in bed with her body leaning forward; violent pulsation of the heart on the least motion; expectoration streaked with pus; died suddenly after fourteen months. *Dissection.*—An ulcer two inches long, occupying the whole circumference of the trachæa immediately above the bifurcation; cartilages in some places exposed and eroded; but in other places the canal was narrowed by the thickening of the parts; bronchiæ loaded with puriform fluid, and the membrane red; lungs sound, except some small portions which were slightly hepatised; heart sound.†

CASE XII.—A woman, aged 40, after the healing of an ulceration of the pharynx, had cough with a feeling of tickling in the glottis; purulent expectoration streaked with florid blood; pulse frequent; voice altered; continued five or six months with little change, and was then cut off by a rapid inflammatory attack after exposure to cold. *Dissection.*—A circular ulcer in the upper part of the trachæa, about one-sixth of an inch in diameter; lungs sound; bronchiæ vascular and filled with puriform fluid. ‡

CASE XIII.—A man, aged 47, had violent cough; hoarseness; some dyspnœa; fever; wasting; died in three months. *Dissection.*—A small ulcer found near the larynx; lungs healthy. §

As this affection has been little attended to in this country, I have thought it of importance to refer to these examples, calculated to illustrate its various modifications, and to establish the pathology of it as a fatal disease, quite distinct from any disease of the lungs. It also occurs in combination with the ordinary tubercular phthisis; and this seems to be so frequent, that from the examination of a number of cases in the French hospitals, M. Bayle supposes the larynx to be affected in one case out of six. The ulceration of the larynx seems in some of these cases to be the primary disease, and in others a secondary affection, occurring as part of that general tendency to ulceration of the mucous membranes which exists in the advanced stages of consumption. When it is the primary disease in a person in whom tubercles exist in the lungs, it is not unlikely that the constant irritation kept up by the laryngæal disease may excite the tubercles into activity, and thus prove the immediate cause of phthisis. A man, aged 30, had cough with pain referred to the larynx, and mucous expectoration, mixed with small pieces of pus; his voice was hoarse and sibilous; deglutition very difficult, the attempt exciting vomiting; hectic fever; died in five months. *Dissection.*—An ulcer nearly an inch in extent, made a free communication betwixt the larynx and the pharynx. Posterior part of the cricoid cartilage was so carious, that it projected into the pharynx at both sides. The lungs were tubercular, and abscesses had begun to be formed at the upper part of them.* A woman who had been long affected with cough and pain of the larynx, was afterwards seized with pain of the breast, dyspnœa, loss of voice, and died gradually exhausted. An ulcer was found in the larynx, and induration with abscess of the left lung.†

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* Cayol, Recherches sur la Phthisie Trachéale.

† Ibid.

‡ Hastings on Diseases of the Bronchiæ, p. 246.

§ Badham on Bronchitis, p. 162.

On the other hand, when the laryngæal or trachæal ulceration appears as the secondary affection, it seems to occur merely as a part of that general tendency to unhealthy ulceration, which exists in many of these cases, particularly ulceration of mucous membranes. This occurs most remarkably in the mucous membranes of the intestinal canal, but may also be observed in the larynx, the trachæa, the bronchiæ, the œsophagus, and even in the urinary bladder. The ulcers in such cases are small but numerous, less extensive, less deep, and more numerous than in the cases of primary ulceration of these parts.

Case XIV.—A gentleman, aged 45, after suffering much from scrofulous tumours on the neck, which suppurated slowly, had cough with frequent pulse; night sweats; emaciation and weakness; expectoration scanty, and consisting of whitish phlegm with a small mixture of puriform matter; his voice was weak and hoarse; and the cough had a peculiar husky sound; breathing sometimes a little frequent, but complained of no pain, and took a full breath without uneasiness; died gradually exhausted after five or six months. *Dissection.*—Left lung sound; right extensively indurated, and full of small abscesses; mucous membrane of the larynx thickened, with some ulceration; mucous membrane of the trachæa covered through its whole extent by a succession of minute ulcers, not above the twentieth of an inch in diameter.

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* Frank, Act. Institut. Clinic. Vilnensis, An. II. p. 63.

† Bayle, Recherches sur la Phthisie Pulmonaire.

The only other modification of this affection which deserves to be mentioned is, when tubercular disease exists both in the lungs and the trachæa at once, and in both is brought into activity about the same time. A girl, aged eight, liable to cough and glandular swellings, was seized with dry cough, difficult breathing, and slight fever, which appeared in the evening. After five days, great oppression, more fever, great dyspnœa, and difficult deglutition; copious perspirations; pain referred to the neck. About the eleventh day, cough increased; occurred in frightful paroxysms, with puriform expectoration streaked with blood, and membranous concretions; died on the 25th day. *Dissection.*—The lungs were full of steatomatous concretions, many of which had begun to suppurate; there were similar concretions in the trachæa and the larynx, which were ulcerated, and furnished much pus. [*] In another case, in which an affection of the lungs terminated in nearly the same manner, tubercles and ulcers were found in the trachæa and the larynx, and an abscess, containing ℥i. of matter betwixt the larynx and the pharynx; the lungs extensively tubercular and suppurated. The power of swallowing was lost in this case. [†]

SECT. IV.—*Chronic Inflammation of the Mucous Membrane of the Bronchiæ.*

The acute inflammation of the mucous membrane of the bronchiæ was long confounded with pneumonia. It is now perfectly distinguished from it in a pathological point of view, though it must be confessed, that in practice the diagnosis is sometimes difficult.

The disease, in its chronic form, may supervene upon one of these acute attacks, or upon a severe catarrhal affection, which, indeed, is nearly allied to it, or it may come on gradually, without being preceded by any acute symptoms. In general, however, it is preceded by an acute attack in some form, especially a severe and protracted catarrhal affection, commonly called a neglected cold.

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[*] Portal sur la Phthisie Pulmonaire, Tom. I. p. 18.

[†] Ib. p. 101.

The morbid condition which then takes place consists, in some cases, of a succession of small superficial ulcers of the bronchial membrane, which can be distinctly traced in the larger branches. In other cases it is a red fungous appearance of the membrane, with irregular granular elevations, and sometimes merely a dark-red colour, with a morbid condition of the secretion. The secretion also varies considerably in different cases and different states of the disease. In some cases it is a viscid, glairy, transparent fluid; in others, viscid and opaque; in others, yellow and viscid; in many, friable, with the sensible properties of purulent matter; and there cannot be a doubt that pus is really formed, as it can often be distinctly traced to an ulcerative process. In general, the expectoration consists of a mixture of some of these, as the opaque viscid matter, with a mixture of pus, and frequently of blood, and the blood is sometimes in considerable quantity.

The disease admits of great variety in its extent, being in some cases confined to the larger branches; in others extending into the smaller ramifications; and in some severe cases it appears to occupy nearly the whole extent of the bronchial membrane. In these cases we trace a redness of the membrane into the minute branches, but we ascertain the disease chiefly by its effects on the secretion, the bronchial tubes being nearly filled with an opaque yellow fluid, having the sensible qualities of purulent matter. When cleared of this fluid, the substance of the lungs is found quite healthy.

In an affection which admits of such variety, both in degree and extent, the symptoms must vary exceedingly, and it is impossible to describe all the modifications of them. Those cases which are of the greatest importance in this inquiry approach so nearly to the characters of consumption, that, in practice, it is often difficult to distinguish them. There is frequent cough, with some uneasiness in the chest, which is in some cases described as a tightness, in others as a rawness or soreness, giving some pain in breathing, and a full inspiration is apt to excite cough. There is considerable expectoration, which in some cases is viscid and tenacious, in others has the sensible properties of pus, and sometimes consists of small quantities of pus, mixed with white frothy fluid. The disorder may go on for a considerable time without much impairing the general health, but rendering the patient able for little exertion, from an extreme susceptibility of cold, and a tendency to have the symptoms aggravated by any exposure. In other cases there is, from an early period, frequent pulse, with dyspnœa, hectic fever, anasarca, perspirations, diarrhœa, and wasting, and all the usual appearances of phthisis. In this manner, it may be fatal by gradual wasting, but the fatal termination often occurs more rapidly in one of the attacks of aggravation of the symptoms from accidental exposure to cold.

The diagnosis betwixt this disease and consumption is often extremely difficult. It must depend, not so much on any particular symptom, as on a careful attention to the history of the disease, and to the character of the expectoration. The expectoration I think is generally more copious than in true consumption, and more tenacious; though it has the purulent colour, it has less friability; when spit upon water, and collected in considerable quantity, it hangs more together, part floating on the surface, and part sinking to the bottom, with viscid filaments running from the one to the other, and connecting them together; and other filaments hanging down from the floating part in loose fringe-like appendages. If examined carefully on successive days, it will be found to vary its characters considerably, being on some days more puriform, and on others more mucous and glairy. The expectoration in true consumption is more uniform in its appearance, that is, after it has become decidedly purulent. It is more apt to sink in water, and has less tenacity, in so much, that after a considerable quantity has been collected, each separate sputum may often be observed lying quite distinct from the rest, and on shaking the vessel, may be seen floating or rolling about without any cohesion. I do not say that these marks are to be relied on, but they are worthy of attention, and the subject deserves minute investigation. Something also is to be learned from the history. The cases are most likely to be this bronchial affection, which have supervened upon an acute inflammatory attack, or on severe catarrhal fever or measles; while the cases which have come on slowly and insidiously, assuming gradually a more and more unfavourable appearance, are more likely to be the true consumption of the lungs.

The prognosis is much more favourable than in the true consumption, and many cases recover perfectly, even at an advanced period, after the symptoms have assumed the most alarming appearance, and the patient is much reduced. But it is also often fatal by progressive emaciation, as in consumption, and exhibits on dissection the morbid appearances already referred to, without any disease of the substance of the lungs.

Case XV.—A man, aged 33, after severe catarrhal symptoms with an exanthematous eruption, had cough, copious expectoration of an opaque fluid entirely resembling pus; short quick breathing; small frequent pulse; night sweats and diarrhœa. He died suddenly after indulging in wine, about a month after the attack. *Dissection.*—The lungs were quite sound without either tubercle or induration. The mucous membrane of the bronchiæ was red and thickened, and the bronchial tubes contained much puriform fluid, similar to that which had been expectorated. *

Case XVI.—A man, aged 25, had pain of chest, with a sense of load or weight in it; difficult breathing; a hoarse cough with expectoration; frequent pulse; and strong action of the heart. After repeated attacks for two years, the disease became permanent with copious expectoration, occasionally streaked with blood; profuse perspiration; gradual emaciation and death. *Dissection.*—Heart and lungs quite healthy; mucous membrane of the trachæa and bronchiæ inflamed; the former slightly; the latter more considerably; the branches contained a great quantity of frothy fluid. †

Case XVII.—A girl, aged 15, after a febrile attack with cough and dyspnœa, had severe cough, with copious expectoration, composed of pus and mucus, and sometimes bloody; debility; increasing emaciation; perspirations; expectoration becoming more purulent; death in two months. *Dissection.*—Lungs healthy, except a little harder and heavier than natural. Trachæa and bronchiæ full of puriform fluid. Bronchial membrane thickened and highly vascular, and small ulcers were found in various parts of it. ‡

Dr Willan frequently met with the disease in London, supervening upon catarrhal fever. There was cough, with thick viscid expectoration, often bloody, and in some cases a mixture of fetid, greenish matter, hectic fever, sweats, and diarrhœa. They all seem to have recovered by topical bleeding, blistering, and antimonials. §

There is another modification of the disease, which occurs in persons rather advanced in life. There is cough, with copious expectoration, varying in its characters, sometimes distinctly purulent; but the prominent symptom is difficulty of breathing. In some cases it is permanent dyspnœa, with suffocating cough; in others it occurs in paroxysms, like asthma, but the paroxysms are generally shorter than in the true asthma. They are apt to occur in the morning, with long fits of coughing, and are relieved by expectoration, the bronchiæ being sometimes cleared of immense quantities of it. They have also a connection with the state of the stomach, and are apt to occur an hour or two after dinner. The disease may go on for years without materially injuring the general health; but it renders the patient extremely susceptible of cold, by which inflammatory symptoms are apt to be induced; and it is usually by one of these attacks that it is fatal. It presents nearly the same morbid appearances which have been already referred to, but generally with more induration of the substance of the lungs; and in some cases, especially those which have terminated by an inflammatory attack, cavities are observed like very small abscesses; but it is doubtful whether they are really abscesses, or whether they are merely the bronchial cells, full of purulent matter.

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* Bayle. Recherches sur la Phthisie Pulmonaire. Obs. 48.

† Roberts. Trans. of College of Physicians. Vol. IV. p. 131.

‡ Hastings on Inflammation of the Mucous Membrane of the Lungs. p. 315.

§ Willan on the Diseases of London.

Chronic disease of the bronchial membrane may go on to a fatal termination, as an idiopathic disease, or it may exist in combination with other morbid conditions of the lungs. The most important of these are two. (1.) The ordinary tubercular consumption. In this combination the bronchial disease may either be the primary or secondary affection. In the former case, it is probable that, tubercular disease having previously existed, the bronchial affection may prove the immediate cause of exciting it to action; in the latter, it appears as a part of that general tendency to ulceration of mucous membranes which occurs in cases of tubercular phthisis. This combination will modify the characters of the expectoration, the proper expectoration of the tubercular disease being mixed with that of the bronchial affection. Another modification arises from combination with tubercular disease which has not suppurated. A man, aged 30, had first catarrhal symptoms, then hæmoptysis, and afterwards cough, with fever and weakness; the expectoration mucous, and in part purulent. He had afterwards night-sweats, rapid emaciation, and diarrhœa; the expectoration became purulent and copious; and he died with all the appearances of consumption. Both lungs were most extensively affected with tubercular induration, a very small part only being sound, but without any appearance of suppuration.* (2.) Chronic disease of the substance of the lungs, of the nature of chronic peripneumony; or the effect of it, simple induration, not tubercular, or hepatisation of the pulmonary substance. In every case of peripneumonia, the expectoration must be derived from the bronchial membrane, except when it advances to suppuration; so that this disease is probably accompanied in all cases by more or less of the bronchial affection. The disease, beginning in this way, may pass into a chronic form, in which the chronic disease of the membrane, with its usual symptoms, is combined with induration of the lung. The expectoration, in these cases, being often puriform, and very abundant, may give the appearance of abscess of the lung.

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* Bayle, Recherches sur la Phthisie Pulm. Obs. 26.

CASE XVIII.—A man, aged 25, after acute peripneumonia, continued to have cough with copious expectoration, which was muco-purulent; rapid wasting, and death in two months. *Dissection.*—Both lungs were indurated like liver, in three fourths of their substance; but without any appearance either of suppuration or tubercles. The appearance of the bronchial membrane is not mentioned, but the expectoration must have been derived from it.*

In another case, the disease was found at an earlier period. A man, aged 36, had difficult breathing, the lungs being dilated with a great effort and a rattling sound; he had cough with mucous expectoration, and died in a month. The lungs were extensively hepatised, but without tubercles. The bronchial membrane below the bifurcation was red and thickened, and covered in many places by a deposition, resembling the membrane of croup. Had tubercles existed in either of these cases, they would probably have been excited into action, and would have been found in a state of suppuration. In some of these cases, however, an appearance presents itself which is apt to be mistaken for suppurated tubercles. In cutting through the hepatised portion of lung, drops of purulent matter start up at numerous points, giving the appearance of numerous small abscesses; they seem to be merely drops of the puriform secretion, discharged from the bronchial canals when they are cut across.

There is still another modification of chronic disease of the bronchial membrane, which, though of rare occurrence, deserves to be noticed. The exudation from the diseased membrane assumes a firm and membranous appearance, and is spit up in the form of polypous concretions or cylindrical tubes of considerable extent, exhibiting the ramifications of the bronchiæ. This appearance was observed by some old writers, and was then considered as an actual discharge of the vessels of the lungs from extensive destruction of their substance. A young man, mentioned by Tulpius, expectorated a tubular portion of this kind, the length of a finger, and branching like an artery. He recovered at that time, but died of pectoral complaints a year after. Another patient, mentioned by the same writer, brought up, with much blood, a similar mass, branching out like the hand.[*] A gentleman, mentioned by Dr Nichols, after an inflammatory attack, coughed up large portions, hollow, very tough, and branching like blood-vessels. He continued to discharge them frequently for seven years, and was otherwise in good health.[†] A boy, aged five years, mentioned by M. Bussiere, had cough, with occasional hæmoptysis, for a year; and, about a fortnight before his death, began to spit up firm membranous substances, shaped like vessels. On dissection, the trachæa and bronchiæ, through their whole extent, even into the smallest branches, were lined by a membranous deposition, which adhered to the inner surface of these parts by very fine filaments, and was easily separated. The lungs in other respects were sound.[‡] A gentleman, mentioned by Dr Cheyne, had cough, dyspnœa, hoarseness, and puriform expectoration, and occasionally brought up firm membranous portions, of a semicylindrical shape, which appeared to have been thrown off from a part of the trachæa, above the bifurcation. They were of a much greater density than the membrane of croup, and of a finer white; consisted of a succession of layers, and were about a line in thickness. The case was in an active form at first, and was treated by repeated bleeding; and he recovered, having continued for some time to expectorate smaller portions of the same membranous substance.[§] A woman, mentioned by the German translator of Portal on Phthisis, expectorated large quantities of the same matter, very firm, in some places almost cartilaginous, and having exactly the appearance of the bronchial ramifications: they were so large, that it seemed inconceivable how they had passed through the glottis. She recovered perfectly in a few weeks.

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* Broussais. Histoire des Phlegmasies Chroniques. Tom. I. p. 68.

Bronchial inflammation, in its active state, requires the most decided antiphlogistic treatment in its early stages; but the period for active practice is soon over; and if the efficient treatment has been neglected at the proper period, there is great danger, either that the disease will be fatal, or that it will pass into a chronic state, in which it is likely to prove extremely tedious and untractable.

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[*] Tulpii, Observationes Medicæ, Lib. II. cap. xiii.

[†] Philosophical Transactions, 1731, No. 419.

[‡] Ibid. No. 263.

[§] Edin. Med. Journal, Vol. IV. p. 141.

In the early stages of the chronic disease, or what may be termed the subacute state of it, benefit is derived from topical bleeding, blistering, issues, rest, cool spare diet, regulated temperature, mild emetics, antimonials combined with opiates, Dover's powder, and digitalis. Some rely much on calomel combined with opium. Dr Hastings recommends extract of cicuta, with small doses of ipecacuan. When the disease is decidedly in a chronic state, with general debility and wasting, it is to be treated entirely upon the tonic plan, by nourishing diet, a cautious allowance of wine, gentle regular exercise, change of air, friction of the body, sponging with vinegar and water, cold or tepid, and remedies of a tonic or stimulating kind, combined with mild opiates, as the cough may require. Of the remedies employed with this view, a great variety have been recommended; they act nearly on the same principle. The most useful are the following: bark in decoction, or in substance; strong decoctions of the vegetable bitters, with a proper proportion of laudanum, or tincture of hyoscyamus, in each glass; preparations of iron, with opiates; balsam of copaiva; myrrh; colchicum; gum ammoniac; seneka; cascarilla; lime-water; horehound. Kerckhoffs recommends the Viscum album as of great efficacy, either in powder or decoction; and the powdered bark of the Salix alba, with a sixth part of sulphur, made into an electuary with syrup of poppies. * Keeping up a pustular eruption on the thorax, by an ointment containing tartrite of antimony, is said to be sometimes extremely beneficial. It is in this affection, I imagine, that the tar vapour is useful. The paroxysms of dyspnœa, which occur in the disease in elderly people, often do not yield to the antispasmodics which relieve asthma. I have found nothing so useful in some of these cases as a moderate dose of laudanum, with a small quantity of tartrite of antimony in solution, perhaps one-sixth or one-fourth of a grain, or such a quantity as can be taken without exciting vomiting.

A leading character of this disease is a remarkable susceptibility of cold; and when it proves obstinate, a most important measure is removal to a mild and equable climate. It is probably in these cases that this measure has been chiefly beneficial.

It is highly satisfactory to know, that, upon this general plan, many cases have been treated successfully, after they had assumed an alarming appearance, and had exhibited many of the

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* Trans. of the College of Physicians, Vol. VI. p. 27.

characters of an advanced stage of consumption, severe cough with purulent and bloody expectoration, febrile paroxysms, perspirations, debility, and emaciation.* In this state it is certainly a disease of great danger, but it is never to be despaired of.

Sect. V.—*Chronic Inflammation of the Pleura.*

This affection is of great importance in this inquiry, as it assumes in a great degree the characters of phthisis, and I suspect is often mistaken for it. The symptoms are cough, with some degree of pain in the thorax, generally either under the sternum, or in one side; tightness and oppression of breathing. The pain is increased by coughing, and by bodily exertions, as walking, and sometimes considerably impedes respiration. The cough is at first short and dry, afterwards there is mucous expectoration, often bloody; and in the advanced stages, it is apt to assume a puriform appearance, and is sometimes decidedly purulent. The pulse is generally rather frequent, but is sometimes very little affected. In this state the symptoms may continue for a considerable time, without producing much constitutional disturbance; but as the disease advances there is debility, with emaciation, hectic paroxysms, night-sweats, diarrhœa, and death by gradual exhaustion, in many cases with great difficulty of breathing, and symptoms resembling hydrothorax.

The morbid action which is going on during this course of symptoms, originates in inflammation, confined to a circumscribed portion of the pleura, and in general not assuming much activity. There is reason to believe that it may continue in this state for some time, and then subside, leaving perhaps adhesion at the part, but no morbid affection of a serious kind. In other cases it is more fixed, and spreads over a greater extent of the pleura, in some cases nearly over the whole of one side. It produces deposition of coagulable lymph, and effusion of a turbid fluid, with flocculi of yellow matter; and frequently the whole assumes a puriform appearance. This effusion may either be contained in the general cavity of the pleura, or in a small portion of the cavity, forming a cyst lined by coagulable lymph, the remainder of the cavity being obliterated by adhesion. In a case by Dr Armstrong, an abscess had been formed immediately under the pleura pulmonalis, betwixt it and the substance of the lung. The quantity of fluid has sometimes been found to amount to seven or eight pounds. The lung in such cases is compressed, and has a firmer appearance than natural, in consequence of the compression; but it may be entirely free from disease, except a coating of coagulable lymph on its surface. Its appearance has been frequently compared to the lung of the fœtus. It has been in some cases so compressed, and so concealed by coagulable lymph and yellow flocculent matter, that it has appeared at first sight to be wanting; and it is probably in cases of this kind that a whole lung has been supposed to be destroyed. In other cases, the inflammatory action spreads into the substance of the lung, producing induration, and the other usual consequences. The affection may also be complicated with tubercular disease, in which case the tubercles will probably be found in a state of suppuration. But the disease may exist without any such combination, and may go through its course to a fatal termination, without any disease of the substance of the lungs.

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* See Richter on Mucous Consumption, Hastings, Badham, Willan, Bayle, Portal, and some very interesting cases by Dr Chapman in the Medical Communications, Vol. I. which had all the symptoms of advanced phthisis, and recovered under the use of cinchona in doses of ʒi. three times a-day. Is the remarkable case described by Mr Abernethy referable to this head? I am inclined to think it is. The patient had severe cough, with extreme emaciation, and a pulse at 140. She spit up in each 24 hours more than a pint of mucus, mixed with pus, and streaked with blood, and had constant diarrhœa, with black and offensive discharges. She took twice a-day a grain of opium, with gr. ss. of calomel, and recovered perfectly. The calomel affected her mouth after she had taken twelve pills. From that time the stools became of a natural colour and consistence; the other symptoms subsided, and soon ceased.

The expectoration in this disease must generally be from the bronchial membrane, as in all cases in which there is frequent irritation of the lungs, without disease of their substance. At first it is merely an increased secretion; but in the more advanced stages, it seems to amount to chronic inflammation of the membrane; hence the expectoration may assume a puriform character. But there is another source of puriform expectoration; for cases have occurred in which the puriform matter, formed in the cavity of the pleura, has found its way by a small fistulous opening through the substance of the lungs, into a branch of the bronchiæ, and has been spit up in large quantities; the substance of the lung being quite sound, except this small fistulous canal. Cases have also occurred in which the fluid has found its way outwards, by an opening betwixt two of the ribs.

The following cases will illustrate the leading phenomena connected with this most important affection. In the first of them I had an opportunity of observing it at an early period, its progress being arrested by another disease, of which the patient died.

CASE XIX.—A young man, aged 19, of a family which had suffered from consumption, was affected, in October 1819, with short dry cough; pain in the thorax towards the right side; sense of tightness in the chest; some constitutional disturbance, with restless nights; pulse little affected. The complaint had entirely the appearance of incipient phthisis. The symptoms had continued with little change for six or seven weeks, when in the middle of December he was seized with a violent pain in the right temple, and fell down suddenly, deprived of sense and motion. He soon recovered his recollection, but was affected with hemiplegia of the left side, and his speech was very inarticulate. He then lay with very little change for several weeks; during which time he was entirely free from his pectoral symptoms. In the middle of January he began to improve a little in his paralytic complaints, and as this took place his cough began to return, with pain in the right side. For three or four weeks he continued to have cough, sometimes severe, but his speech was quite distinct, and the motion of the left leg was greatly improved; the arm continued completely paralytic. On the 15th of February, he was again suddenly attacked with loss of speech, preceded by pain in the back of the head; and he lost the power of swallowing, which he never recovered. His speech returned in a very short time. From this time, the pectoral symptoms again disappeared and never returned. He was fed by means of an elastic gum tube till the 20th of March, when he died gradually exhausted. *Dissection.*—On raising the dura mater, a remarkable depression appeared, on the right hemisphere of the brain, on the anterior part of the middle lobe. This was found to arise from an extensive portion, which was broken down into a soft pulpy mass, without distinct suppuration and without fetor; it extended nearly the whole depth of the hemisphere. Adjoining to it, there was a small abscess, no larger than a bean, lined by coagulable lymph. There was a small quantity of fluid in the ventricles. On raising the brain a remarkable appearance was observed in the basilar artery. It appeared externally to be very much enlarged, but when cut into was found to be solid, its cavity being completely filled up for about an inch in length, by a firm white substance. Anteriorly to this portion there was a coagulum of blood in the artery. The other parts of the brain were sound. In the thorax there were extensive adhesions; and at the lower part of the right side, betwixt the lung and the ribs, and extending down upon the diaphragm, there was a considerable deposition of coagulable lymph, which was soft and transparent. The lower part of the right lung was rather firmer than usual; the substance of the lungs in other respects was quite healthy.

CASE XX.—A man, aged 22, had been long in hospital affected with cough and slight mucous expectoration; a fixed dull pain in the left side of the thorax; and frequent pulse. He had afterwards diarrhœa, and died after a long illness in the last degree of emaciation. *Dissection.*—The left cavity of the pleura was full of a grey ropy fluid, the pleura was thickened, red, and covered with a white friable exudation two lines in thickness. The lung was compressed, and its substance rather fleshy, but not otherwise diseased.*

Case XXI.—A young man had cough and pain of the right side, which was not severe but never gone; increased by exercise; febrile paroxysms. The cough was chiefly troublesome in the night; afterwards diarrhœa; wasting; anasarca; and death in three months, with extreme emaciation. *Dissection.*—Left lung quite sound; the right was attached to the ribs by recent adhesions, except at one place, where it was free from adhesion; and a circumscribed cavity was left betwixt the two pleuræ, which was lined by a thick coating of coagulable lymph, and contained about lb.iss. of purulent matter. The substance of the lung was a little firmer than natural, but crepitating.†

In the following case, the disease was complicated with tubercles:

Case XXII.—A man, aged 22, had severe cough, at first dry; afterwards with thick and white expectoration; general undefined uneasiness across the thorax. When he lay on the right side, his breathing was oppressed, when on the left, he was harassed with cough; so that he was generally obliged to sit up; frequent pulse; wasting; died in five months. *Dissection.*—Right lung much diminished in size, and full of tubercles with some abscesses; the cavity of the pleura full of a milky fluid, and the pleura covered with a thick exudation. Left lung hepatised, and with some tubercles not suppurated.‡

Case XXIII.—A man, aged 30, after a pneumonic attack had cough, with white opaque expectoration; short oppressed breathing, and pain in the left side of the chest, which disappeared on the 28th day of the disease. The cough continued, and the expectoration became purulent and fetid, with night-sweats, emaciation, diarrhœa, and death in four months. *Dissection.*—Right lung adhering extensively, but healthy, except a small part of the inferior lobe, which was firm, with one or two tubercles. In the left cavity of the pleura lb.iss. of greenish fetid pus; pleura thickened and covered with a thick albuminous layer, with albuminous bands which crossed from one pleura to the other. Superior part of the left lung perfectly sound. The inferior lobe was compressed and flattened, but not otherwise diseased, except that two fistulous openings passed through it, and made a communication betwixt the bronchiæ and the collection of matter in the cavity of the pleura.§

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* Broussais, Histoire des Phlegmasies Chroniques. Tom. I.

† Ibid.

‡ Ibid.

§ Bayle. Obs. 43.

CASE XXIV.—A man, aged 62, had pain in the chest and right side; oppressed breathing; frequent pulse and cough with expectoration, which was first mucous, then bloody, and then purulent; wasting; diarrhœa; and death in five or six weeks. *Dissection.*—Right lung adhering, except at one part on the right side, where there was formed by the two pleuræ a cavity lined with thick flocculent matter, and full of pus; pleura forming this cavity was in some places covered with an adventitious membrane a line and a half thick. Two thirds of the lung sound. The lower third was compressed and firmer than usual, and a fistulous opening three inches long passed through it, which admitted a female catheter, and made a communication betwixt the bronchiæ and the collection of matter in the cavity of the pleura.*

In a case mentioned by the Italian translator of Portal, after symptoms similar to those in the above cases, a tumour formed externally on the right side of the thorax, which burst and discharged abundance of pus, and in a fit of coughing air sometimes passed through it. There was hectic fever and great wasting, but the man gradually recovered. In a case mentioned by Dr Ayton Douglas, a tumour appeared in the same circumstances under the left scapula, which, during violent fits of coughing, was sometimes distended to the size of a quart bottle, and suddenly diminished again. The man had cough, with copious expectoration, which was purulent and fetid. The tumour subsided gradually, and disappeared after two years, and the man recovered.†

In the diagnosis betwixt this disease and phthisis, we must be chiefly regulated by the acute fixed pain, referred to a particular spot. But it must be confessed that the diagnosis is sometimes difficult, and must depend more upon minute attention to the history and phenomena of the case, than upon any particular symptom. When it assumes considerable activity, the diagnosis will be the easier; but as the pulse is often little affected, there is danger of mistaking the pain for a muscular affection, and thus allowing the period to go by, when it may be treated successfully. It is only in its early stage that it is the subject of active practice; in the advanced stages it is probably irremediable. The remedies are few and simple. General bleeding is often required; large and repeated topical bleeding, blistering, issues, rest, and cool spare diet, are the leading articles, with the aid of antimonials, opiates, &c. If the dangerous nature of the disease be overlooked at the commencement, and the case be injudiciously treated by tonics and exercise, the error is likely to be fatal. A young lady, mentioned by Dr Rush, had pain in the right side, with frequent chills and feverish paroxysms. She recovered by repeated small bleedings. Next summer she was seized with the same symptoms, but put herself under the care of another physician, who recommended country air and exercise. Under this plan she got gradually worse; in autumn was confined to bed; and continued during the winter affected with constant pain in the right side, with inability to lie upon it, and died in May. A remarkable circumstance in the case was, that she had neither cough nor frequency of pulse, until a month before her death. On dissection the left lung was sound, the right adhered extensively; and in separating the adhesions, a sac was discovered containing half a pint of matter. * In some of the cases, the paracentesis thoracis would afford the only chance of relief, but the remedy is very precarious, and the relief at best might be but temporary. †

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* Bayle. Obs. 44.

† Edin. Medical Essays, Vol. VI. p. 127.

Sect. VI.—*Disease in the Posterior Mediastinum, and of the Glands connected with the Lungs.*

These affections deserve to be shortly referred to in connection with this inquiry, though they are of much inferior importance in a practical point of view, to the diseases mentioned in the preceding sections. They produce dry cough, with some uneasiness in breathing, and various anomalous symptoms; sometimes pain, referred to the back, so fixed and severe, that it is apt to be mistaken for disease of the spine. A girl, mentioned by Bayle, had dry cough, with wasting, and afterwards severe diarrhœa; she died at last of a short pneumonic attack. There was ulceration of the mucous membrane of the bowels. The lungs were sound, except the appearances of recent inflammation. The only other disease in the thorax was enlargement of the glands at the root of the lungs. In another case by the same writer, there was suppuration in the anterior mediastinum, complicated with disease of the lungs. In a case by Laennec, there was a cyst full of hydatids compressing the lung; and in one by Avenbrugger, there was a solid organized mass behind the left lung. In a case by Bayle, in which the lungs were extensively tubercular, there was also a tubercular mass behind the lungs, and in contact with the vertebræ, several of which were carious from the pressure. I have seen, in a case to be mentioned afterwards, an extensive abscess in the posterior mediastinum, with caries of the vertebræ; but it also was complicated with disease of the lungs. In the first volume of the Medical Communications, a singular case is mentioned, in which ulceration of the lungs had passed backwards, and formed a communication with the œsophagus. I saw lately a man, aged 58, who had a mass of diseased glands on his neck, pain under the sternum, difficult breathing, and an acute pain referred to a small spot about the middle of the spine. After three months he had attacks of headach, with loss of speech, which at first occurred once in two or three days, and continued about fifteen minutes; afterwards they occurred every day, and continued longer; the longest was six hours. He had then double vision and numbness of the right arm. His breathing became more difficult, so that he often could not lie down, and he died suddenly in a fit of suffocation, about three weeks after the appearance of the head symptoms. The lungs were loaded with fluid, but otherwise sound. A chain of diseased glands passed down from the glandular mass on the neck, behind the trachæa and the lungs; the largest were behind the division of the bronchiæ. In the anterior part of the right hemisphere of the brain, there was a tumour the size of a nut, of a reddish brown colour and very firm. No other morbid appearance.

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* Rush's Medical Inquiries, Vol. II. p. 112.

† See an important case by Dr Henderson, in the last number of this Journal, with most interesting remarks by Dr Hennen.

SECT. VII.—*Ulceration of the Lungs, of a healthy character, from Active Inflammation.*

Active inflammation in lungs otherwise healthy, frequently terminates by the formation of an abscess in the substance of the lung. The abscess, in such cases, is distinctly circumscribed, and the matter is contained in a soft sac of coagulable lymph. The pulmonic substance around the abscess is, in some cases, hepatised, in others quite healthy. Such an abscess may burst into the bronchiæ, or into the cavity of the pleura, and, in either case, if the collection be extensive, it may be speedily fatal. But it may also be spit up, and has frequently been so, to the extent of lb. i. or more, in a very short time after the first bursting. There is thus left a cavity like that of any other abscess, which may then take on a healthy action, and gradually heal. In this case, cough continues, with purulent expectoration, for a longer or shorter time, according to the circumstances of the case, but the expectoration gradually diminishes in quantity, and at last disappears, the cough also ceasing along with it.

The healing of such an abscess may be retarded by a variety of causes, and if the disease has been extensive, or the strength of the patient much reduced, he may sink under it, with all the usual symptoms of consumption. But it is a disease quite distinct from consumption, and one which, in a great proportion of cases, we may hope will terminate in recovery. I shall afterwards have occasion to refer to this subject, and to investigate, by examples, the difference betwixt this affection and the unhealthy ulceration which constitutes consumption.

Sect. VIII.—*Hæmoptysis and its Consequences.*

Facts and minute observations are wanting on this important subject, but, from the whole phenomena of the disease, it is probable that hæmoptysis ought to be viewed under several aspects, differing considerably from each other.

I. In such an organ as the lungs, in a great measure composed of vessels, it is not wonderful that derangements of circulation should take place, and that a vessel should occasionally give way. This may occur from general plethora, from occasional changes in the general circulation, as in women from suppression of the menses; and it may arise from causes affecting more immediately the lungs themselves. The most obvious and intelligible of these is, any obstruction to the return of the blood from the lungs to the left side of the heart. Such an obstruction existing while the full quantity is sent into the lungs from the right ventricle, a state of the lungs takes place, in some degree analogous to that of the brain in simple apoplexy, and we readily conceive how a branch should give way. The principal causes of this condition are diseases of the left side of the heart, and induration of a part of the lungs. Whatever other causes give rise to it, may prove causes of hæmoptysis, but in these there is considerable obscurity. We call it congestion, but this merely expresses the fact, without explaining any thing; the question immediately recurs, Whence this congestion, except from the organic causes referred to? It seems to proceed from a certain inflammatory state of the substance of the lungs. Hence arises the genuine acute hæmoptysis, which is nearly allied to peripneumonia, and requires the same treatment in the most decided manner. Under this treatment we expect it to terminate favourably, in a great proportion of cases. The breach of continuity which has taken place is equivalent to a wound; this may either heal, or may advance to suppuration, and produce purulent expectoration. If this take place in lungs otherwise sound, it may terminate favourably, like the healthy ulceration already referred to; if it take place in unsound lungs, the ulceration will be unhealthy, and will probably lead to consumption.

II. There seems to be a modification of hæmoptysis, differing materially from the former, though assuming an active form, in which the hæmorrhage is from the vessels of the bronchial membrane. It appears to be preceded and attended by less dyspnœa and oppression of the thorax than the former, and rather by rawness and tenderness, with a sharp irritating cough, having the characters of the catarrhal or bronchial inflammation, as the former has of the peripneumonic. The blood is generally in smaller quantity, and mixed with frothy fluid in the early stages; afterwards with the expectoration proper to the inflammation of the bronchial membrane. In several of the cases formerly described, we have seen it combined with the disease of the bronchial membrane; and a case, described by Portal, fixes still more distinctly the existence of this source of the hæmorrhage, without connection with any disease of the lungs. A young man was liable to attacks of hæmoptysis, which occurred generally several times every month. After this had continued for two years, he died of an affection of the brain. The lungs were found perfectly sound; some of the bronchial glands were much enlarged, and covered with blood-vessels. Some of these vessels were distinctly traced terminating by open extremities on the surface of the bronchial membrane, and appeared evidently to have been the source of the hæmorrhage. This bronchial hæmoptysis is nearly allied to, and perhaps usually accompanied by, the inflammation of the bronchial membrane, and may be followed by the symptoms of that affection in its chronic state, with puriform expectoration, and many of the appearances of consumption. But it is an affection quite distinct from consumption, and affording a much more favourable prognosis.

III. The two former affections are more or less acute diseases. There seems to be a third modification of hæmoptysis, which is not in any degree acute. It appears to arise from the immediate rupture of a vessel, in consequence of disease of its coats, without the peripneumonic congestion of the first species, or the bronchial disease of the second. The patients are generally pale, feeble, and scrofulous-looking, and the pulse weak and slow. It may probably arise either from the pulmonary vessels, or from the bronchial membrane, and, in both cases, seems to be connected with tubercular disease. In the former case, therefore, it is very likely to be followed by consumption; in the latter, by the chronic disease of the bronchial membrane in its most unfavourable form.

IV. A fourth modification arises from a vessel giving way from previous ulceration in a case of true consumption. It is distinguished by being preceded by purulent expectoration. It is often immediately fatal, and at best admits only of palliative treatment.

To the various affections resembling consumption, which have been referred to, we ought, perhaps, to add some remarkable cases, in which similar symptoms were kept up by extraneous substances lodging in the bronchiæ. A man, mentioned by Mr Howship, had violent cough, with copious expectoration, and frequent hæmoptysis; constant fixed pain in the right side of the thorax, and extreme emaciation. After four months, when his case was considered as hopeless, he brought up, in a violent fit of coughing, a small nail, $\frac{7}{8}$ of an inch in length. Eleven or twelve years have elapsed since this event, during which he has enjoyed tolerable health, though liable at times to cough and hæmoptysis. He was sensible of the nail slipping down his throat, while he held it in his mouth when at work, immediately before the commencement of his illness.[*] A man, mentioned by Mr Arnot, after suffering severely from cough and dyspnœa for more than a month, brought up a spongy piece of bone, the size of a hazel-nut, and got well speedily.[†] In the London Medical Journal for 1786, Mr Holman mentions a man who had severe cough, purulent expectoration, mixed with blood, hectic fever, profuse night-sweats, and diarrhœa. After these symptoms had continued till he was reduced to a state resembling the last stage of consumption, he one day spit up a pint of blood, and soon after coughed up a piece of bone, measuring $\frac{6}{8}$ of an inch in length, and weighing six grains. His alarming symptoms ceased almost immediately, and he was soon in perfect health. He remembered having swallowed a piece of bone fifteen years before, which stuck in his throat, and was pushed down by a probang. From that time he had been subject to cough, which had gradually increased. A woman, mentioned by Bartholinus, brought up, under similar circumstances, a small kernel of a nut, and got well immediately. The German translator of Portal mentions a woman, who, after being considered as phthisical for some time, brought up, in a violent fit of coughing, a stony concretion, half an inch long, and soon after got well. In several cases referred to by Laennec, hydatids were expectorated, with relief of pectoral symptoms of some standing; and Borelli mentions a gentleman, who recovered from a state of extreme danger, by coughing up a small piece of nutmeg, which had slipped into the larynx, and had been the cause of complaints, which were considered as consumptive.

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[*] Howship's Obs. in Surgery and Morbid Anatomy, p. 222.

[†] Edinburgh Med. Essays, Vol. VI. p. 115.

These observations, on *diseases resembling consumption*, I submit as a slight and imperfect outline of a most extensive subject, in the hope that they may serve to show the importance of it, and to direct to it the attention of those better qualified, both to correct the outline, and to fill up the details. The whole is at present in the most rude and imperfect state, and that most important branch of it, the diagnosis, is entirely in its infancy. But it is one of the most interesting subjects that can occupy the attention of the British practitioner, and his utmost exertions will be amply rewarded, if any degree of precision can be introduced into the pathology of consumption. At present, it is certainly vague and unsatisfactory in the greatest degree, while, in the British Islands alone, the annual mortality from consumptive diseases is from fifty-five to sixty thousand.

III.

Description of a Variety of Carbuncular Furuncle. By JOHN FOSBROOKE, Surgeon.

THERE is a cutaneous disease, which, for the last three years, has been sporadic. Its origin is known to me as being coincident with the appearance of the great epidemic, but as I have observed it in parts of the kingdom remote from each other, some of which have been traversed by it, and others not, I cannot infer that any relation subsists between them. It has not yet, within the compass of my reading, been found on record, and I am induced to give it a local habitation, from a sentiment, that nothing is undeserving a place in the repositories of knowledge, however graduated in the scale of diminution, which comes within the observation of him who regards the improvement of his profession as a point of any moment. Both in symptoms and external appearance, it is very dissimilar to the common Phlegmon, and if it makes an approach to any species, it is to that which the vulgar term the blind *blane* or boil. I have observed this latter disease very incidental to persons brought up to marine employments, where the irritation of salt water, and constant evaporation on the surfaces of sores and chaps, is often producing it, but it is assimilated only in its slow action. I consider it confined to the skin and subcutaneous textures, and, in most instances, I have not observed that any bodily indisposition was at all prior to it, except some general disturbance of the digestive functions. Its universal diffusion has disposed some intelligent individuals to think that it affected peculiar idiosyncrasies, by contagious properties; but whilst infectious propagation is liable to so much scepticism, I would not be thought presuming to vouch any such assertion without strong evidence.

The features of this little disease are a dark red and depressed swelling,—that kind of flat convexity, which is usually described by the term lenticular; the inflammation is intense and concentrated; and if these little tubercles undergo pressure in the early stage of suppurative inflammation, a transparent serum is effused, probably coagulable lymph, or, in more chemical language, coagulable albumen. It is slow in maturation, and pus first appears in a very minute yellow elevation in the centre, the surrounding space circumscribed by the inflammatory process still continuing, in a slow state of that action, particularly hard and solid. The quantity of matter discharged is not very great, and, in most cases, where the inflammation is not very obvious on the surface, it appears to act so vigorously beneath, that the cellular membrane partakes of the disease, and comes away in a small eschar. A redness is left after healing, and pitting, owing to the continued vascularity of the capillaries of the part, but the superfluous number of new sanguineous vessels gradually contract, the reticular texture is reformed, and the former return to their original seriferous functions. I particularly remarked these strong discolorations of a mulberry hue upon the nates of a gentleman with whom I was bathing in the Wye, and who had been the subject of these eruptions.

The symptoms are such as warrant me in conceiving it to be a member of a much more important class; and if I had fortitude to argue in a style of ingenious hypothesis, I should call it a degenerate variety of true carbuncle. All this family are exceedingly alike, in the manner in which they take their rise, progress, and decline, and convey sensation. Of all authors I have found Ambrose Parey (fol. edit.) the most accurate describer of carbuncles, and I fancy that he had seen all kinds. His symptomatology of species of superior magnitudes, and from that circumstance more malignant, would define this disease with sufficient *vraisemblance*, allowing for its comparative insignificance of degree. Speaking of the "hot burning plague spot," of which Dr Bateman has given an engraving, he says, "In the beginning, while the bubo is breeding, it makes the patient to feel as if it were a cord or rope stretched out in the place, or a hardened nerve with pricking pain, and shortly after the matter is raised up as it were into a knob, and by little and little it groweth bigger, and is inflamed." (p. 531, fol. ed.) This hot, throbbing, and lancinating pain, with intermission, has been compared by the vulgar to the operation of slow burning, and the medically informed know it to be the true carbuncular sensation. There is a contraction, as it were fibrous, and a tearing of this asunder, which renders locomotion painful. It seems to attack particular regions—those, too, which are invariably the most subject to the carbuncle, called in the London hospitals the chronic carbuncle, viz. the sides of the spinal column, the sides of the neck, the nates, the upper and inner part of the thigh, in the course of the inguinal glands. Having been myself the subject of it in the last mentioned situation, I found myself tremblingly alive to every contraction and extension of this extremity. But whether in parts of voluntary motion or not, the incommoding concomitants of heat, &c. are the same, so that the patient generally finds it "dulce reponere desiderato lecto." As to any constitutional effect that it has upon health, or any sympathetic disorder that might be expected to befall the digestive organs, I have observed neither in many instances, but nervous irritation solely.

As to the causes of this disease authors have considered the common furuncle produced by the state of the stomach. Plenck even considered styes as thus originating. Hunter observes of the chronic carbuncle, that he never saw but one patient with it in an hospital, because it attacks those who live well, and who are beyond the middle age. Now, the kind which I have described attacks the young and middle-aged, and those certainly who live well, preferentially. But if I judge by Mr Hunter's rule, that the stomach should be primarily affected, if any affection is thence derived, I must be decidedly of a contrary belief. There is strong presumptive evidence for thinking, that the mode by which diseases generally called infectious are communicated is precisely analogous to that by which this attacks the constitution. According to Pliny, the carbuncle was first imported to Rome from the province of Narbon. The diagnosis is sufficiently easy, and no man has ever given it better than Mr Hunter, (On the Blood. *) He observes, that the boil has more of *true* inflammation than the carbuncle. French authors distinguish carbuncular eruptions which attend the typhus gravior and pestis, from the idiopathic, by the terms benign and malignant, always situated on the skin or subcutaneous membrane. They discriminate carbuncle by the " colore vinacée," and the boil by the " colore violée." The deleterious influence on the tissue with which it communicates is thus in a very national mode described by Delpech. † " Il est probable que du moment que la tumeur est formée, la mort de tissu cellulaire et de la peau est *irrevocablement* decidée !" A shrug of the shoulders is the only full stop to this. As to the situations most liable to this disease, they seem to be those which are most distant from the centre of circulation, and consequently oppose the least resistance to disease and death. In these parts, cellular membrane is certainly most intermixed with muscular texture, and from this it might be inferred that all carbuncle commenced in a morbid disposition of this tissue ; but I do not observe that the usual phenomena of cutaneous diseases would bear out any such origin or analogy, and other evidence is required. The colour differing from that of erythema is probably owing to the mode of action excited in the vessels ; for if it was merely gangrenous, and not specific, it would first be of the common hue.

With regard to treatment, I cannot advise an early exoneration of the central fluid by the abscess lancet ; the knot of vessels which are throwing out an effusion in the early stage, are merely irritated into increased action, and parts in such a state, according to the common laws of surgery, are not exactly likely to assume, if wounded, a healthy action. The greatest extent of suppuration is a spot in the centre. In the common carbuncle Delpech, who deprecates incisions, tells us, that M. Dupuytren had observed a prompt crucial incision to stop the progress, and caused the " entanglement des parties enflammés," to disappear. I once saw a practitioner apply the lunar caustic to the suppurative circle, but without much mitigation of pain in the part, or ultimate interruption of the natural progress of the disease. Leeching I have not observed. As I have kept in view the analogies of this disorder, with intention to assimilate the principles of practice, as well as pathology, I shall here mention some observations of Parey. He suggests vesicatories in proximity to the carbuncular tumours. "A vesicatory applied in a meet place *below* the bubo profits them very much, but not above." Of cataplasmal applications, he observes, "If presently after the beginning there be great inflammation, with sharp pain, as it often happeneth, especially when the abscesses be of the kind of carbuncles, we must abstain from those remedies that are hot and attractive." This advice is founded on certain vague apprehensions of the humoral pathology; but I must remark, that when stimulated by plasters to suppuration, the glands discharge a thin and quickly maturated fluid, which is not attended with any resolution of the abscess.

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* Pp. 227, 223. Not the same in the 8vo edit. of 2 vols.

† Delpech, Precis Elementaire des Maladies Reputés Chirurgicales, 1816.

From reading an old German work, which I have now totally forgotten, on the use of the sulphuric acid in some cutaneous diseases, I was induced to try it in these cases. It is my practice to give the diluted acid (P. L.) in doses of twenty minims, increasing them by gradual augmentations to one drachm and two drachms in each dose, twice a day, very largely diluted. If the first dose is half a drachm to a robust subject, it may be increased five drops every day in each dose. This may be called administering acids *pleno rivo*, but let us reflect on our improved habits in using the alkalies, as also the dilute nitric acid. The most immediate influence of this remedy is, according to the report of the patient, and my self experience, (for I did what is considered very bad taste, I first tried the experiment on myself,) a *deadening* of the pain, and a gradual absorption of the swelling without suppuration. A learned physician, to whom I communicated this observation, and from whom I have received the communication of the best knowledge I ever acquired from any source but self exertion, acquaints me that there is an aptitude in the dilute acid, largely given, to produce uncontrollable diarrhœa, a proof of powerful action on the portal viscera; but not having encountered this check, I merely mention it to guide the experiments of others, and to anticipate any adverse surprise at such an accident. In this case diluted nitric or nitro-muriatic, in doses of twenty minims, may be used; but it is to be recollected, that the bases of these acids differ from that of the sulphuric, and, according to my own observation, they are comparatively very feeble in their influence.

Some men dread spasmodic contractions of the stomach, either anti-peristaltic or circular; but such fears would be totally imbecile, unless the organ we have to act upon is aged, or very susceptible from disease. I have some reason to surmise that the sulphuric acid is a powerful solvent of cutaneous disease, and is remarkably speedy in its action upon the economy of the cuticular system.

P. S.—The unremitting attention which I have paid to the subject of vaccination, and the tribe of diseases implicated in that subject, has led me to believe that transformations, hybrid actions, and degeneracies, are constantly worked, so as to effect variety in cutaneous diseases, and to dilute or heighten malignity. It may be inquired in which manner does this medicine operate? How by invigorating the system by stimulants and alterative tonics, do we produce that tone which diminishes remote, irritable, and chronic states of inflammatory action?

New Kent Road, London, Feb. 20, 1820.

IV.

Cases of Small-Pox, after Vaccination, which occurred in one Family. By T. Owen, Surgeon to the Welsh Charity.

Elizabeth Collett, aged four, had been vaccinated when an infant, but the scar on her arm is slight.

On the 15th of December 1819, an eruption of pimples took place on the face and different parts of the body, accompanied with a rash; and this had been preceded by fever and headach for about three or four days.

When I first saw her, which was on the 17th, the third day of the eruption, the pimples on the face contained lymph, and were a little depressed. She had much fever, white tongue, frequent pulse, and redness of the face.

18th, or fourth day of the eruption.—The pimples are gradually filling, and the fluid in them is somewhat opaque. The fever is less.

19th, or fifth day.—The fever is much abated; the eruption is now completely full of pus; the pustules increase in size, and are globular.

20th, or sixth day.—The fever has quite subsided; the face is a little swelled; the pustules are full of white matter, with some surrounding inflammation.

21st, or seventh day.—Almost all the pustules are dry and horny, and of a straw colour.

22d, or eighth day.—Such of the pustules as were not dry and horny yesterday are now becoming so.

23d, or ninth day.—All the pustules are now dried up and brown.

In a few days, the scabs fell off, and left an elevation of the cuticle, which continued some time. Three pustules, near the angle of the mouth, were confluent, but none of the pustules left scars.

I had some doubts, at first, whether this was not the chicken-pox; but, from the subsequent stages of the disease, I was convinced that it was the small-pox, and said so at the time; and another medical practitioner, who saw the child, was of opinion that it was small-pox.

George Collett, aged 11, complained, on the 26th of December, eleven days after the appearance of the eruption on his sister, of pain in his head and back, with a sense of weariness. When I first saw him, on the 28th, he had pain in his head, and also a very severe pain in the lower part of his back; his eyes were red, and his face was flushed; he was drowsy; his pulse was frequent, and his tongue white. He likewise complained of pain in his belly, which was tender on pressure. He was ordered some purging medicines.

29.—He passed a restless night. The symptoms as yesterday, with the addition of great stupor. The opening medicines were persisted in; and, in the afternoon, he had copious evacuations, which relieved his bowels; and he did not afterwards complain of pain in them, nor tenderness on pressure.

30.—He had a restless night. The stupor has increased, and he is sometimes delirious; the fever continues unabated; his eyes are red, and there is a redness and fulness of the face; red pimples have appeared on the stomach and bowels, and other parts of the body, accompanied with a rash; he had a convulsive fit about three in the afternoon. When I saw him, which was after it was over, he was stupid, and his pulse was full and frequent. Four leeches were applied to his temples. His face afterwards became less swelled and red. He was often sick.

31.—A great many more pimples came out this morning, all over his back, accompanied with a rash. They were elevated and hard. There was no abatement of the fever, and the pulse was very quick. He is often sick, and vomits some dark-coloured mucus. He bit the tip of his tongue, during the convulsive fit, which made it bleed. His tongue and mouth are covered with a dark coat, and there is an accumulation of saliva in the mouth. The belly, back, and limbs are this afternoon covered with distinct pimples and a rash, accompanied in various parts with slight ecchymosis. The stupor and redness of the eyes continue, and he is at intervals delirious. He passed blood with his urine, and his stools were tinged with blood. In the evening, a greater quantity of blood came away with his urine, as well as with his motions. In the night, his pulse became more frequent and weaker; mucus collected in the trachæa; and he died about three in the morning.

Dr Lister, who was consulted in the afternoon of the 31st, gave a decided opinion that the disease was the small-pox; and recommended that all the persons in the family, who might be liable to take the small-pox, should be vaccinated or inoculated, in order to give them a chance of security against the infection. There was immediately after death very great ecchymosis. He was vaccinated when an infant, but the scar on the arm was slighter than in any of the rest.

Mary Ann Collett, aged 12, was not well on the 27th of December. On the 29th, she had a slight fever, white tongue, and a sense of languor.

30.—An eruption of pimples took place on the face; she has not much fever.

31.—The pimples on the face increase in size; a few have appeared on the hands and arms. On pressure, they are hard like seed.

Jan. 1.—The pimples increase in size, and contain lymph.

2.—The pimples are filling with opaque matter; there is no fever.

3.—The pustules are globular, and surrounded by slight inflammation; the face is a little swelled.

4.—The pustules are larger than they were yesterday, and full of pus.

5.—The pustules are becoming dry and horny.

6.—The pustules which made their appearance last are getting dry and horny.

Dr Ashburner, Physician to the Small-Pox Hospital, saw this case when the pustules were full of pus, and gave a decided opinion that the disease was the small-pox in a modified state.

Henry Collett, aged 14, has had a slight headach, and has complained of heaviness for about four days.

Jan. 1.—Red pimples appeared on the face to-day.

2.—More pimples have made their appearance; there is one on the hand larger than the rest; he has not much fever; the tongue is a little white; and he has a slight giddiness.

3.—The pimples increase in size; they are hard on pressure, but their apices contain opaque fluid; he is not much indisposed.

4.—The pustules are gradually coming forward.

6.—The pustules on the face and hands contain pus, with a slight surrounding inflammation.

7.—The pustules begin to get dry and horny.

He was vaccinated when an infant. The scar on one of his arms is larger and deeper than those in the arms of his brothers and sisters.

Dr Ashburner, who saw him at the same time with his sister Mary, pronounced the disease to be small-pox in a modified state.

He was vaccinated again on Jan. 1, in both arms. A slight inflammation appeared, but no vesicles.

John Collett, aged 10.

Jan. 1.—He is slightly indisposed.

2.—He had a convulsive fit in the night. This morning his pulse is frequent; tongue white, accompanied with a slight headach and pain in his limbs.

3.—Two or three pimples appeared on his upper lip, and a few on the back; the pulse is quick, and his tongue white.

4.—The pimples on the lip are not larger than they were yesterday; his pulse is not so quick as it was yesterday, and he is more lively.

5.—There are a few pimples on the back, but they are drying up without forming matter.

6.—He is quite well.

He was vaccinated when an infant; the scar on the arm is slight. He was vaccinated again on Jan. 1, without producing any effect.

Richard Collett, aged one, who was vaccinated when a few months old, escaped the infection. The scars on the arms are very slight.

He was vaccinated again on Jan. 1. 4. The arms are inflamed.—6. Very small vesicles are formed, which, without increasing in size, dried up in a few days.

Little doubt, I think, can be entertained that all the above mentioned cases were cases of small-pox, and that Elizabeth Collett communicated the disease to her brothers and sisters. It may, perhaps, be doubtful whether George Collett had had his constitution affected by the vaccination which he had undergone in his infancy, and which had left a slighter scar than was left in any other of these cases; but it seems probable that the small-pox was rendered mild in the other cases by the previous vaccination.

London, Chancery Lane, March 6, 1820.

V.

On the Disposition to Diseases in the Liver and the Lungs, induced by the influence of Climate on those Organs. By J. MACDONNELL, M. D. Assistant Surgeon, 55th Regiment.

Few pathological facts are, I believe, more generally admitted, and perhaps less satisfactorily accounted for, than those arising from the influence which climate exerts over the human frame. I allude particularly to that susceptibility of disease which affects the liver and the lungs; the one in warm, the other in the colder climates. I shall here endeavour to explain my views on this subject, and if, in so doing, I shall deviate from the beaten track, and venture to dissent from old and received opinions, I must entreat those who will favour this paper with a perusal, to withhold their judgment, until the context is before them.

I certainly experience considerable diffidence in assailing theories, however vague and unsatisfactory I may deem them, hallowed and established as they have been by the hand of time and the sanction of ages. Still a wish to promote the discussion of a subject so highly interesting, as well to mankind as to the profession in general, but more especially to that portion whom duty frequently calls from one extreme of climate to another, induces me to submit, what is, I believe, a novel view thereof. How far I have succeeded, will be best appreciated by those who have enjoyed the good fortune to unite greater ability with more extensive practical information.

I am disposed to attribute the susceptibility of disease which originates from climate, to the influence of temperature on a very important operation highly essential to existence, I mean the removal of carbon from the blood.

As the nourishment, growth, and existence of all animals, depend chiefly on the quantity and quality of aliment received into their stomachs, so all animals are endowed with appetites, which stimulate them to seek food, and with powers to guide them in the selection. The food, by the various processes of mastication, trituration, and exposure to the gastric juice, is converted into a pultaceous homogeneous mass, and from this mass the chyle is taken up by the lacteals, and conveyed by the thoracic duct to the subclavian vein of the left side, where mingling with the blood, it enters into the circulation, and is distributed to the utmost extremities of the corporeal system. The remaining portion of the food passes downwards through the intestinal canal, and is evacuated as excrementitious.

But, notwithstanding the power of election which the lacteals possess, certain matters unavoidably enter the circulation whose presence may be noxious, or at least useless; while, at the same time, the animal is incessantly undergoing changes, in consequence, as well of the deposition of new matter, as by the absorption and removal of the old; hence, it follows, either that the system must become surcharged to destructive accumulation, or be endowed with adequate powers of elimination; and, accordingly, we observe provision for these purposes, in the several organs destined to the separation and evacuation of injurious effete or useless matter, as the urinary system, the lungs, the skin, and I will add the hepatic system; for, to this object, and not in order to exert any direct influence in the process of chylification, I suspect the secretion of bile will be most justly attributable.

The size and situation of the liver, the peculiarity of its circulations, and of the fluid which it secretes, could not fail to attract the attention of anatomists and physiologists in all ages. The spleen enjoyed for a considerable time the "divisum imperium," until modern anatomy detected the errors of the old, and left the world in doubt as to the real function or utility of that viscus; while it has established those facts relative to the liver and the bile with which we are now acquainted: but I apprehend we have received with too implicit a facility, and adopted without sufficient circumspection, the opinions our predecessors have offered on the use of bile in the animal economy.

Although it has been admitted by all parties, that bile is essentially instrumental to the process of perfect digestion, scarcely any two agree on the mode whereby it exercises this necessary instrumentality. Some rely on its diluting and lubricating properties; some on its appropriate stimulant; some supposed that its application as a chemical agent to the intestinal contents, prepared them better for the action of the absorbents; while others attributed its advantages to certain presumed antiseptic qualities, whereby it resisted that tendency to putrefactive fermentation, which, as was apprehended, would have otherwise resulted. I shall first briefly notice these several opinions, and then submit my own on this subject.

The viscidity of bile, and its proportionate small quantity, render it a very unimportant adjunct as a diluent to the liquid ingesta, to the saliva, the gastric, and pancreatic juices, as well as the fluid poured out by the exhalants all along the course of the intestines, (a fluid, which, by the way, is derived from that identical portion of the blood that returns by the portal route.) Indeed, I believe, that very few who have made practical observations on the appearance of the egesta of patients, generally denominated bilious, will be disposed to place much reliance on the lubricating or diluting properties of the bile.

When it is asserted that bile acts as a stimulus to the intestines, exciting them to a due exercise of their functions, healthy bile must of course be understood. It must be admitted that a fluid so acrid as bile, will cause considerable excitement and irritation, in parts unaccustomed or unadapted to its presence; but the same may be said with equal justice of the tear, which not only does not offend but protects the delicately sensible conjunctiva; and of the urine, whose presence causes no injury to parts habituated to its contact, (for the contractility of the bladder responds not to the quality but to the quantity of its contents,) yet either of these fluids, suffered to remain on inappropriate parts, commits ravages, equal at least to those consequent on the presence of bile under similar circumstances. Besides, it is a well known law of the animal economy, that matters really stimulating, nay, even noxious, lose by repeated application much of their power. Thus we daily experience the necessity for augmenting the doses of the most narcotic, as well as the most drastic medicines, and surprising quantities of even the most violent poisons have been taken with impunity, in consequence of gradually habituating the constitution to their presence. Cholera and icterus have been both adduced in evidence of the stimulating properties of bile, the one positively by its excess, the other negatively by its absence or deficiency. I need not observe how unjust must be any conclusion, relative to bile in its healthy state, drawn from those circumstances, observable when the hepatic system labours under the influence of disease. Although in cholera the alvine discharges evince a considerably increased quantity of bile in the intestines, still they are frequently unaccompanied by fecal matter, which, however, appears when the disease is on the decline. Would this be the case if bile was the appropriate stimulus to the peristaltic motion ?

In icterus, Dr Pemberton, on whose testimony we may certainly rely, (in his Treatise on the Diseases of the Abdominal Viscera,) asserts that the bowels are as often open as otherwise.

Neither of these diseases can therefore be adduced in proof that bile is the appropriate stimulus to the intestines. I would rather hazard the opinion, that the unusual increase or deficiency of bile in the intestines, is not the cause, but the symptom of disease in the abdominal viscera ; and that any torpidity of the bowels in icterus, as well as the retention of the feces in cholera, arise in both cases from general derangement of the entire system. The sudden and decided relief afforded by a free use of the lancet, in that form of cholera which so lately nearly depopulated parts of Southern Asia ; and evidences of highly inflammatory diathesis, denoted by the appearances of blood taken from several of his jaundiced patients, by Dr O'Reilly, in the hospital of the 55th regiment, tend to confirm my opinion.

With regard to the chemical agency of bile on the intestinal contents, or, in other terms, its chylopoietic action, a short examination of the organs wherein this function is carried on, will satisfy us of its inefficacy.

The chyme on passing out of the stomach enters the duodenum, whence it proceeds through the jejunum and ileum to the greater intestines. In its passage through this canal, it is made to present constantly fresh surfaces to the patulous orifices of the lacteal absorbents, which minute vessels select that portion of the entire mass suitable to the nourishment of the animal. The duodenum more particularly, and the jejunum, (especially at its superior portion,) possess the most efficient means for promoting this object ; for, not only are the absorbing orifices much more numerous in proportion to the extent of surface in these parts, but they are likewise, especially the duodenum, furnished with valvular duplicatures of the internal membranes, thereby affording considerable further extent and addition to the absorbing surface. It is to be presumed, therefore, from this structure, that absorption is most vigorously carried on in these portions ; and that if bile were indispensable to chylification, it would commence its operation immediately on entering the duodenum. The contrary is, however, the fact, as observed by Dr Saunders, in an experiment performed on a dog, when he distinctly states, that "the bile was seen passing along quite inert, and not at all to blend with the alimentary mass;" a fact which is, I conceive, in itself sufficient to overturn any hypothesis founded on the chemical action of bile.

Although heat and moisture conduce much to the putrefactive fermentation, I rather think that the preservation from putrescency of the intestinal contents, is more fairly attributable to the removal by absorption of that portion most applicable to nutrition, and most susceptible of the putrefactive process, together with the absence of atmospheric air, than to any antiseptic properties really existing in the bile.

What, then, it may be asked, is the use of the bile? and what function does the liver, with its complicated apparatus, carry on? I ask, in turn, what results attend the phenomena of respiration, and by what function do the lungs, with their as complicated apparatus, contribute to the preservation of animal existence? I answer both questions at once, thus;—that they remove from the circulation certain properties or matters, which, having fulfilled the objects for which they were previously deposited, are, in consequence of the changes the animal constantly undergoes, resumed, in order to be succeeded by depositions of fresh matter, and must, of course, be now rejected as excrementitious. The skin, the kidneys, the lungs, conspire to this effect; have we not, therefore, analogy in favour of the supposition, that the liver harmonizes with these organs, and corresponds with them in its functions?

No sooner is the healthy action of any of these organs impeded, than the general system shows evident symptoms of the interruption. Irregularity in the secretion, or undue retention of urine, cause a urinous taste and smell on the saliva, in the breath, and sweat. The effects of obstructed perspiration are manifold, and often destructive. Impaired or obstructed respiration causes lividity of countenance, with a sense of suffocation, and frequently terminates in death. And irregularity in the secretion or transmission of bile, is as certainly denoted by a sallow or yellow colour of the skin, bitter taste, and all those other symptoms generally considered bilious.

As might naturally be expected, bile has been often subjected to chemical investigation, but as many of its analyses were conducted with a view to establish certain preconceived theories, we find as many different results, as there have existed various hypothesis. All, however, admit, that the chief peculiar ingredient consists of a bitter resinous principle, suspended in mucus; but as resin is carbon in a very pure state, we may fairly infer, that the chief function of the liver is to abstract carbon from the blood, and that it co-operates with the lungs in this highly important function; a correspondence farther indicated by the circumstance, that both the liver and the lungs exercise their action upon venous blood. We have, therefore, two organs coinciding in function, so far as relates to the abstraction of carbon; and, as I shall prove that the lungs are, alone, inadequate to the uniform abstraction under the varieties of temperature, we must look upon any arrangement, tending to preserve uniformity in so important an operation, as consonant to the general rules of animated organization.

The due secretion of bile, and its freedom of exit, are so necessary to the well-being of the animal, that nature has been equally solicitous as for the kidneys or the lungs, to protect the liver from external force or injury, as well as to afford a free escape to their several secretions; and although the situation of the mouth of the ductus-communis in the duodenum appears to have sanctioned received opinions, I believe that impartial consideration will discover in this formation no more than the most convenient route, in the same manner as the urethra of fowls is placed in the rectum, for the convenience and greater perfection of the animal.

The symptoms demonstrative of bile in the stomach are well marked, and always indicate considerable distress of that organ. The gall-bladder seems an appendage, intended to obviate the frequency of that distress; for, as during the plenitude of the stomach no ingress from the duodenum is practicable, and when the pylorus relaxes, the passage of the aliment downwards prevents ingress, so the periods of repletion and subsequent discharge seem not only the most suitable for excluding the bile from the stomach, but also the most favourable to its perfect elimination. Accordingly, at these periods, but especially during repletion, the gall-bladder being pressed upon, discharges the bile which had been accumulating during inanition, and the bile now entering the duodenum in full flow, passes inertly along the canal, accustomed to and destined for its presence, to be thence expelled, together with the fecal excremental matter.

If we may be allowed to argue from effect, is it not more probable that the benefit arising to bilious habits, from the use of purgatives, depends more on the removal of this noxious fluid, than any direct influence they may have upon the liver? for, although purgatives, by stimulating the muco-secretory vessels of the intestines, not only diminish the volume of blood returning by the porta circulation, and, of course, prevent hepatic congestion, but likewise, most probably, prepare that fluid for more healthy elaboration, still the positive removal of this noxious fluid is the immediate and most obvious advantage. I wish, however, tó be understood to speak of those cases when a redundancy of bile is known to exist with a torpidity of bowels, for I will not presume to assert that the liver, no more than the lungs or the kidneys, is exempt from a certain degree of specific action, determined to those viscera by medicines received into the stomach, although I cannot account for such determination.

Having now exhibited what I conceive the most rational view of the functions of the liver, and having attributed to the bile a use which appears most analogous to the other secretions of the trunk, I shall proceed to the ultimate object of this paper, namely, to account for that tendency to disease which the liver assumes in warm climates, and that of the lungs in colder ones.

.When the capacity of the thorax is increased by the appropriate action of its muscles, the lungs also dilate, and a quantity of air proportioned to the size of the thorax, and its capability of enlargement, rushes into the lungs. The air thus inhaled enters the minute air cells, where it comes into juxta-position with the blood diffused through the parenchyma, by means of the pulmonary circulation; absolute contact is only prevented by the most delicate interposed membrane. Here the blood and air become mutually decomposed; the former, from a dark purple, assumes a bright red colour, while the returned air is considerably altered from its previous constitution, 14 parts only out of 27 of oxygen gas being now present, while the remaining 13 parts are withdrawn, and converted into carbonic acid gas. Now, as these alterations are attributable to the process carried on in the lungs, we must conclude that the new arrangement results from the combination of carbonaceous matter existing in the blood with a portion of the oxygen of the atmosphere; a conclusion farther warranted by the well known affinity of those substances: but as this combination must be subject to the laws of elective attraction, and as the relative proportions of oxygen in the atmosphere are uniform and invariable, it follows that, under equal circumstances of temperature and barometrical pressure, equal portions of oxygen will combine to form carbonic acid gas, and, consequently, equal portions of carbon are abstracted from the blood.

The atmospheric air is an elastic fluid capable of expansion and diminution of volume, according to the elevation or reduction of temperature; equal volumes, therefore, contain at various temperatures various ponderable quantities of its ingredients; thus, if 100 cubic inches, at the temperature of 60°, weigh 82 grains, and the oxygen gas thereof weighs 8 grains, a temperature that would increase the volume to 200 cubic inches, or double the former, would also affect the oxygen gas, by diffusing it throughout the increased volume, and, consequently, 100 inches of atmospheric air, at the higher temperature, would contain but 4 grains of oxygen, being only half the quantity contained in an equal volume, but at the lower temperature.

Notwithstanding that the lungs admit equal volumes of air in all varieties of temperature, still, as the positive quantity of oxygen depends on the varieties of expansion consequent on temperature, it varies according to the degree of that temperature, and, of course, the quantity of carbon removed also varies. Now, as any considerable irregularity in the removal of carbon is incompatible with health, or even with existence, nature must have provided some vicarious outlet, in order to preserve the balance, and obviate the consequences emanating from those interruptions to which the removal of carbon, by the process of respiration, is liable; and this outlet, I venture to assert, is the liver.

The epicures of ancient Rome, and the French gourmands of the present day, appear to have been practically aware of the effect produced, by respiring in heated air, upon the liver; as the former, in order to procure one of their principal luxuries, (the enlarged liver of a goose,) fed the animals in heated apartments, and the latter manage Muscovy ducks in a similar manner, with the same intention. The bird is prevented from removing, by nails driven through the interdigital membranes, into a board, and then placed opposite a strong and constant fire, where it is compelled to inhale heated, and of course rarified, air; considerable action of the respiratory muscles, with gasping, ensue, but these symptoms gradually subside, and, at the same time, the liver gradually increases, to the almost total displacement of the other abdominal viscera.

If, therefore, I have satisfactorily proved that the liver cooperates with the lungs in the process of decarbonation—and if it appears, that, in uniform temperatures, these organs act with regular, steady, and uniform results,—it follows, that any change in the temperature of the atmosphere must induce a corresponding change in the balance of their functions, and an increase or diminution in their respective secreting actions must occur.

In colder climates the lungs are the chief agents, while in the warmer ones increased action is imposed upon the liver.

Increased action implies increased determination, and this, again, disposes to inflammatory tendency and congestion. But, as variety of temperature causes variety in the energies of action in the liver and the lungs respectively, corresponding consequences supervene; and, as the lungs are more engaged in cold climates, they are also more disposed to disease; while in the warmer ones, the liver, acting with increased energy, becomes also more susceptible.

Bury Lane, August 7, 1820.

VI.

Case of Aneurism of the Arteria Innominata, with Drawings.

By John Whiting, M. D. Lynn-Regis.

The drawings which accompany this letter are intended to represent an anterior and posterior view of an aneurism of the arteria innominata, taken from the body of a man about 40 years of age, whose general health had been good; but, for about three years previous to his death, he had laboured under a constant difficulty of breathing. This difficulty was much increased by all muscular exertions; and, on walking against the wind, ascending a hill or a flight of stairs, it amounted nearly to suffocation, obliging him suddenly to rest, as in angina pectoris. Ordinarily, he complained of no pain in the chest, and he could fill his lungs with air without inconvenience. He was frequently troubled with a harsh and crowing cough, and expectorated much mucus, which was sometimes streaked with blood. To these symptoms was added difficulty in swallowing all solid food.

The patient attributed his ailments to some cause which existed in his throat, and pointed to the top of the sternum as the diseased part.

Nothing remarkable had been observed in the pulse until shortly before his death, when the surgeon who at that time attended him found it intermitting in the right wrist. Unfortunately the left was not examined.

During the period in which he was the subject of these symptoms, he was frequently attacked with catarrh, which invariably aggravated his distress. At these times, indeed, he suffered much pain in his chest, accompanied with high fever; and so urgent has been the dyspnœa, that the strongest muscular efforts were required for carrying on respiration. After a few days, these attacks generally terminated with a copious expectoration, and he was restored to his usual state, as described in the former part of my letter. But, while labouring under the last attack of this kind, nature seemed to be exhausted in the struggle to maintain the action of the lungs, and he died about a week after the commencement of the catarrhal symptoms.

While the disease was making its progress, various remedies were used, accordingly, as the circumstances indicated. When the symptoms were of the severer kind, bleeding and blistering gave him much relief; and, at other times, a compound of aloetic and squill pill, taken at bed-time, seemed to be of service in promoting the expectoration, and preserving the healthy action of the bowels.

On inspecting the body, but few things that were remarkable presented themselves besides the aneurism.

The muscles of the chest and abdomen were unusually large and florid, the intercostal particularly so. This circumstance may perhaps be attributable to their constant and powerful employment in respiration. The viscera of the abdomen were in the most healthy state; nor was much disease discovered in the chest. The heart, however, although of its usual structure, was larger and stronger than it is commonly found. Neither the external surface of the lungs, nor an incision made into their substance, discovered any thing morbid, except a considerable enlargement of the ramifications of the bronchia, which were also filled with a frothy mucus, and the membrane, which lined them internally, appeared to be slightly inflamed.

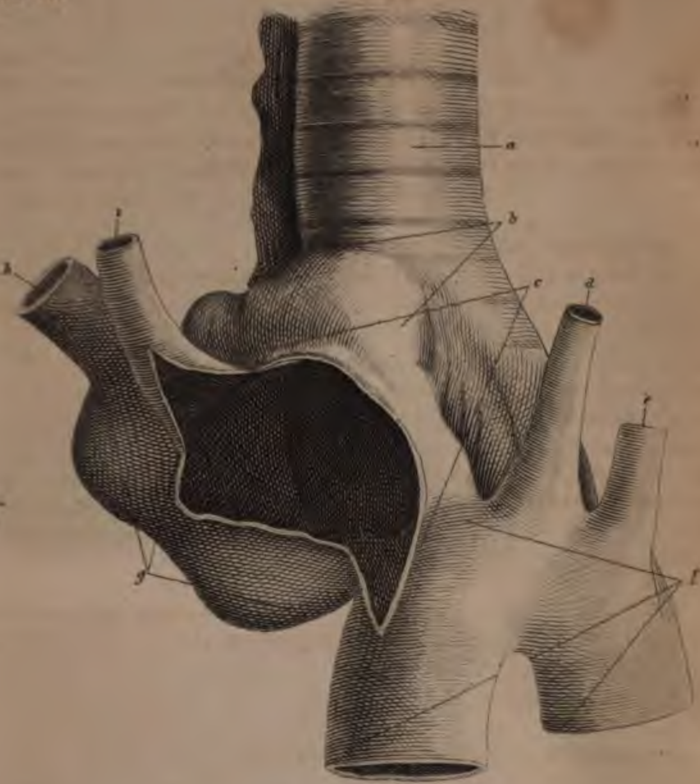
The aneurism was discovered lying immediately behind the upper extremity of the sternum, and a little toward the right side, pressing backward upon the trachea, the cartilages of which seemed to have been absorbed at the part where the pressure had been made. By this pressure, also, a perfect union had taken place between the aneurismal sac and the trachea; and a smooth, red, oval tumour appeared within the tube, of such a size that its calibre was diminished more than one half. These particulars, I think, may be sufficiently understood by comparing this short description with the representations of the parts, which I have sent you. The other parts of the throat were in a sound state.

Should the relation of this case be considered by you worthy of a place in your Journal, its insertion will greatly oblige me.

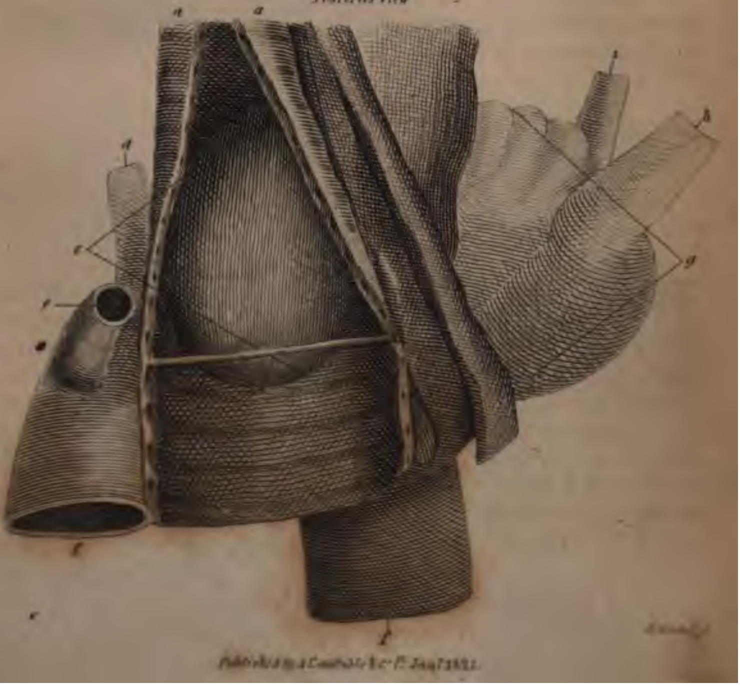
Lynn-Regis, March 20, 1820.

Dr Whiting's Case of Aneurism

Anterior View



Posterior View



Published by [illegible] Aug 1 1822.

DESCRIPTION OF DRAWINGS.

Anterior View.

a. Anterior part of the trachea.
b. Junction of the aneurismal sac with the trachea.
c. Aneurismal sac cut open and seen projecting backwards into the trachea.
d. Left carotid artery.
e. Left subclavian artery.
f. Arch of the aorta.
g. Aneurismal sac.
h. Right subclavian artery.
i. Right carotid artery.

Posterior View.

a. a. Trachea cut open on its left side.
c. Tumour formed on the right and posterior part of the trachea, from the pressure of the aneurism.
d. Left carotid artery.
e. Left subclavian artery.
f. f. Aorta.
g. Posterior view of the aneurismal sac.

VII.

Case of Purpura Hæmorrhagica, with Remarks. By J. S. Combe, M. D. Member of the Royal Medical Society of Edinburgh.

While the opinions of medical men, relating to the pathology and treatment of purpura hæmorrhagica are so unsettled and contradictory, the discovery of any circumstance which may tend to elucidate the one, and improve the other, must be considered as not a little interesting; on this account, I trust that the history of the following case will be found not altogether unworthy of a place in your valuable Journal. The case which I am about to relate, afforded me an opportunity of detecting an important change in the urinary secretion, hitherto, as far as I know, unobserved in similar circumstances; and which I conceive may be of great service in directing us to a more correct knowledge of the disease, and consequently to a more rational and successful mode of treatment.

Edward Canny, æt. 10, was brought on the 19th September 1820, for advice, to the Leith Public Dispensary, and afforded a fine example of this remarkable disease. His skin is universally covered with petechiæ of a dark brown, almost black colour, varying in size, from that of a pin head to one-third of an inch in diameter; their form is nearly circular, but, on the lower extremities, they are observed to be less distinctly circumscribed, and of a pale colour. On the face and extremities they are not perceptible to the touch, but feel slightly elevated on the chest; a number of small hard tubercles can be felt on the scalp, which, when pressed, occasion a slight degree of pain; the tongue, gums, and fauces, as far as can be seen, are studded with spots, but not so thickly as on the outer surface. The intervening portions of skin and the tunica adnata of the eye are of a bluish white, very sickly colour. There is a constant and pretty copious discharge of *thin* pale blood from the mouth and nostrils. The petechiæ on the tongue bleed freely when touched. Pulse 116, small, and rather sharp; skin hot; tongue white, with a very slight fur; his breathing is hurried, but he is able to draw a full inspiration. His appearance is strongly expressive of anxiety, poverty, and debility. He says that his appetite is not affected; that he is very thirsty; suffers severe pain in his head and legs; and that he is very weak.

His mother reports that she first observed these spots two days ago when the boy rose, and that on the evening of the same day, the blood began to flow from his mouth; that he had passed a loose stool, in which there were bloody dots. She is greatly alarmed; neither can she assign any cause for his illness. He was ordered a brisk purgative, and 10 drops of acid. sulph. dil. aromat. thrice a-day.

20th.—The petechiæ are now of various shades of colour; blood coming off very freely; pulse 120, and small; one stool procured, which was scanty and very fetid; skin hot; appetite good; the urine reported to be sparing in quantity, and thick.

Rep. pulv. purg. et cont. acid sulph. D.[*]

On the 21st he was not visited.

22d.—I found him nearly as he was two days ago. A number of the spots are run into large vibices, and the discharge of blood is equally copious, and seems much attenuated; his pulse 120, and fuller. Has vomited twice a little blood; complains much of sickness when his head is raised from the pillow; severe pain of the head; bowels freely opened: stools dark-coloured and fetid; his urine I could not get a sight of, but it is reported to be of a high colour, and sparing in quantity.

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[*] It is proper to remark, that the patient was first under Dr Anderson's charge; but being unable to attend at the Dispensary, Dr A. obligingly requested me to visit him, which I did from the 20th September.

Habt. iterum pulv. purg. et sumat. pulv. cinch. gr. x. cum acid. sulph. dil. gtt. viij. quartâ quâque horâ.

Let him have an ounce of port wine every five hours.

23d.—Slept ill; complains much of the pain in his forehead; nausea, and occasional retching; great debility. Pulse 110, and small; the petechiæ and hæmorrhage as in last report; bowels freely opened; urine scanty, turbid, and depositing a copious sediment; his body emits a most offensive fetor, extremely disagreeable even to his friends, not accustomed to breathe the purest atmosphere; they could not procure wine for him, but had given him warm spirits and water pretty freely.

Cont. omnia.

24th.—I found him this morning in a very alarming state; he is oppressed with nausea, and vomits on the least exertion. He has not taken his medicines; the blood is flowing more copiously from his mouth; the petechiæ are gone into large clusters on the forehead, arms, and legs. Pulse 120, and hard; violent pain of his head; skin hot on the trunk, but cold on the extremities. Having detected serosity in the urine yesterday, and observing that the present treatment is not only useless, but seems positively hurtful, I resolved, in his desperate state, to alter the treatment, and to try the effect of venesection. The state of the pulse alone encouraged me to do this. Not being able to find a proper vein in the arm, I opened the external jugular vein, keeping his head low; about ℥viij. of blood were abstracted. He became faint, and vomited; the pulse softer and slower. The blood flowed in a small stream, and was of a very pale colour, liker the washings of flesh than common blood; it coagulated slowly, without any separation of serum, and shewed no buffy coat. He was ordered a purgative, and to discontinue the other medicines and spirits. On calling eight hours afterwards, I was happy to find him rather better; the sickness had much abated, without any recurrence of the vomiting. Pulse 110, soft; headach easier; bowels have been opened three times, and the stools are more natural in appearance. There has been a copious flow of pale, limpid urine; the wound in the vein had not closed, and he had lost probably about an ounce and a half of blood before it was stopt. It was bound up with a compress and proper bandage.

25th, 8 o'clock, A. M.—I was called in great haste to stop the bleeding from the wound of the jugular vein. His clothes and bedding were quite soaked with blood; it was observed to be still paler, and more attenuated than before. Caustic was applied to the edges, which looked more dead than living. In other respects he was decidedly better; his voice was stronger, his countenance more animated. His headach was relieved, and there was no nausea or vomiting; his urine was very turbid. He was ordered to be kept quiet, and to have what diet he chose, but no spirits. I saw him again in the evening, and learnt that, for the last two hours, no more blood had been discharged either from the wound or mouth.

Habt. tinct. opii, gtt. xx. h. s. Et pulv. jalap. gr. xij. cras mane.

26th.—The wound again opened during the night, by which he lost about an ounce of blood. Slept well; headach very slight. Pulse 120, and soft. No more blood discharged from the mouth or nose; the petechiæ are of a fainter colour, and more diffused. The bowels have been freely opened; stools natural; urine clear, and of a pale yellow colour.

27th.—Convalescent. No fresh spots or hæmorrhage. He was ordered a mild purgative and a generous diet.

28th.—Gains strength. Bowels costive; appetite improving; slept well; spots of a bluish appearance. He was ordered to resume the acidulated bark, and a brisk purgative.

30th.—Convalesces rapidly, sits up for a few hours, his appetite and digestion are good, and he has no pain of head.

Oct. 4th.—Gains strength rapidly, and has no complaint.

7th.—The spots have disappeared, and he is discharged.

I shall now proceed to state more fully the peculiarities in the urinary secretion to which I alluded. It is unnecessary to state the results of every day's examination. I shall therefore select portions of urine passed at three different periods, in all of which the changes were very striking.

The first portion which I examined was passed on the 23d September, at 9 A. M. the day previous to the venesection; and the following is the result of the analysis performed an hour afterwards.

1. It was observed to be of a fawn colour, turbid, and depositing on standing a brown, flocculent precipitate, sp. gr. 1°.028, smell urinous and sharp.

2. It did not affect the colour of paper stained with litmus, turmeric, or litmus paper reddened by an acid; acetic acid produced no change.

3. Diluted nitric acid caused an immediate precipitation of a dense, white coagulum: 240 grains of urine yielded about 4 grains of this substance nearly dry.

4. Four drops of a saturated solution of oxymuriate of mercury produced the same effect, but the precipitate appeared granular and less in quantity.

5. The addition of aq. calcis or aq. ammoniæ caused a precipitate of a white powder, in an unusually large proportion.

6. A portion of it set aside, in six hours gave evidence of the existence of ammonia; in sixteen hours it was very putrid.

7. 480 grains of it were heated; at the temperature of 156° it became turbid and milky; speedily copious white flakes separated; and, upon reaching 180°, it was covered with a thick white coagulum; the remaining liquor was clear, and contained 1-35th part of solid contents. Treated in the usual way, it afforded no uric acid, and a very small proportion of urea, but a large quantity of phosphoric salts and colouring matter.

8. Oxymuriate of mercury and infusion of galls added to the filtered liquor produced no change.

From these experiments (and others which it is unnecessary to relate) we find that this portion of urine contained a large quantity of serosity and phosphates, with no free acid, and a small proportion of urea. Experiment eighth indicates the absence of any gelatinous or muco-extractive matter.

The urine of the next day seemed to contain rather less albuminous matter, but no free acid; it speedily putrified. That of the 25th and 26th differed only in containing less serosity; that of the 28th deserves to be more minutely detailed.

1. It was perfectly clear, of a pale yellow colour, depositing no sediment. Sp. gr. 1.026.

2. It distinctly but faintly reddened litmus paper, and the brick-dust crystals were deposited on the addition of nitric acid No coagulation.

3. Infusion of galls occasioned a copious brown precipitate.

4. On heating it to the boiling temperature, it emitted a strong urinous odour, suffering no other change. Infusion of galls produced the same effect on the filtered liquor. It afforded a considerable proportion of urea and phosphates.

5. A portion of it set aside, in the space of 24 hours was still acid; in 12 hours more, it was alkaline and fetid.

6. By evaporation its solid contents amounted to 1-29th part.

This portion of the urine, then, is to be distinguished from the former, as containing no albuminous, but a free acid, and gelatinous matter. That of 29th did not perceptibly differ; but on the 2d October, I could detect neither albuminous nor any other foreign ingredients; it strongly reddened vegetable blues; in short, I could not find that it differed in any respect from healthy urine.

We have thus observed the urine in three very different states of chemical composition, and perhaps it may hereafter be discovered that these changes are connected with, and indicative of, other important changes going on in the animal economy. We have, in the first place, the urine at the height of the disease, and previous to venesection, remarkable as containing no free acid, a minute quantity of urea, but a large proportion of albumen, the phosphates, muriates, and colouring matter. In the second place, when the force of the disease seemed broken, and after the hemorrhage had ceased, there is no albumen detected, but gelatinous matter and a free acid, with an increased proportion of urea. Lastly, in the convalescence of the patient, we observe the urine as it is usually found in a state of health. The urine of the evening always contained a larger proportion of animal matter than in the morning. I forbear from attempting any explanation of these striking phenomena; well assured, that, if they shall be found to hold true in other instances, they will speedily arrest the attention of some of those able men who are now prosecuting the science of animal chemistry, and whose labours bid fair to further the progress of the healing art. But, in a medical point of view, I may be allowed to remark, that the existence of a large proportion of albumen in the urine of persons labouring under purpura hæmorrhagica is a circumstance worthy of our attention in two respects:—1st, As elucidating the pathology of this disease, at present hid in great obscurity; 2dly, As establishing and confirming the mode of treatment latterly adopted in this case.

We are confessedly in great ignorance of the nature of this disease, and, as is often done in similar cases, we have satisfied ourselves by tracing analogies, real or supposed, which it bears to other complaints whose pathology is better known or less disputed. This mode of reasoning is always fallacious, and serves to lead us from one error into another. As applied to the disease now under consideration, it appears to me equally false and dangerous. Dr Willan, in treating of purpura, says, "I consider it, in all its forms, as pertaining to the scurvy." * And Strack, (whose little work is very ably written,) refuting the notion of its critical nature, concludes thus: "Contra vero esse morbum a putridis rebus, quæ in intimo ventre residere; sive hæ a vitiatis cibis supersint, sive a vermibus aut vivis, aut mortuis, aut putridis, sive denique ab alia corrupta colluvie, quæ ibidem confluxit." † Others, again, whose theoretical opinions were at variance with the humoral pathology, have considered relaxation and debility of the solids as the proximate cause of this disease. ‡ Finally, there are some, who, neither solidists nor humorists, taking a part for the whole, and an effect for the

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* Willan on Cutaneous Diseases, p. 467.

† C. Strack, Observat. De Morbo cum Petechiis, Carol. 1766, p. 69, 79.

‡ Brown's Elem. Med. Milman on Scurvy.

cause, have attributed it to general debility. "Non possum igitur quin putem, debilitatem haudquaquam causam proximam esse hæmorrheæ." "Hoc autem non est theoriam proponere, sed rem tantum affirmare." *

From an attentive consideration of the phenomena of this disease, from the appearances presented after death, and from the effects of the *juvantia* and *lædentia*, I think we are warranted to consider many of the symptoms of this affection to result from an increased vascular action or sanguineous congestion; and that it bears, in one respect at least, a striking resemblance to the inflammatory dropsies.

In confirmation of this opinion, (which I am aware is not original though admitted by few,) I would refer to several papers recorded in your Journal. Two very interesting cases transmitted by the late Dr Parry, both occurring in plethoric habits, and immediately relieved by venesection, bear strong evidence on this point.† Dr Bateman met with a case in a debilitated woman, and prescribed tonics, which were useless; but she was cured by purgatives, and the discharge of the catamenia. "This circumstance," adds Dr B. "tends greatly to obscure the pathology of the disease." ‡ Dr Jeffreys relates a very alarming case which yielded to bleeding; and Dr Harty of Dublin has found tonics injurious, but purgatives effectual in all his cases. ‖ Two cases, highly important from the examination after death, are detailed by Drs Bateman and Walsh; in the first there were many proofs of congestion in the viscera of the chest and abdomen; § in the other, occurring in a robust soldier, a large clot of blood was found lying under the left temporal bone, with great turgidity of the vessels of the pia mater, and copious petechiæ on the stomach and duodenum. The man died comatose. ¶ Dr Blackall has related four cases of what he terms "Diseases resembling Land Scurvy," but which I humbly imagine are to be referred to the disease now under consideration, and differing only as having occurred in vitiated habits. In three of them serosity was detected in the urine. ** The close resemblance which this disease holds with the hydrops plethoricus of Continental authors, must strike the most superficial observer. Dr Grapengiesser remarks, that those of a lax and spongy habit are predisposed to dropsy; that they often complain of congestion in the head; that the only natural crisis is a hemorrhage; that on dissection the large vessels are found turgid; and that the stimulant plan of treatment is always hurtful.[*] Lastly, we have to take notice of the curious coincidence in the states of the blood and urine, the former uniformly exhibiting the buffy coat,[†] the latter abounding with serosity. On this latter circumstance, as manifested in the present case, where what are called the symptoms of debility and putrescency were very alarming, I am disposed to lay considerable stress. The bugbear debility has long blinded our judgments, and fettered or misplaced our exertions; but its true nature has been ably explained by our modern Sydenham.[‡] The existence of the albumen in the urine, striking in itself, is important equally in a pathological and practical point of view; for I consider it to be a point established by the most accurate observation, that its presence is connected with an increased action in some part of the sanguineous system, and that in such cases the depleting system is at least safe; the contrary always pernicious. Dr Scudamore, an excellent observer, indeed thinks, that such a state of the urine may be induced by a vitiated state of the digestive organs, (at present the fashionable *fons malorum*,) and that purgatives may be useful in this respect. Yet this judicious physician has not failed to make the following valuable remark: "In many most opposite and striking instances of disturbed action of the stomach, the liver, and the bowels, I have not succeeded by purgatives and alteratives, until the brain itself has been relieved from a state of congestion, and which had been rather obscurely shown by the symptoms."[||]

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* Bateman, Disp. Med. De Hæmorrhagea Petechiali, Edin. 1801.

† Edin. Med. and Surg. Journal, Vol. V. p. 7.

‡ Ibid. Vol. VI. p. 124.

‖ Bateman's Synopsis.

§ Edin. Journal, Vol. VI. p. 374.

¶ Ibid. Vol. IX. p. 161.

** Blackall on Dropsies, p. 150.

I am disposed to think that there are two species of purpura hæmorrhagica, the one accompanied by fever, and a disease of increased action; the other a chronic affection, and not attended by fever, inflammatory blood, or serous urine; our practice of course must be regulated by the individual cases, and not a little, perhaps, by the state of the urinary secretion.

Leith, 1820.

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[*] Grapengiesser, in Duncan's Med. Annals, Vol. I. Consult also Strack and Burserius.

[†] The case just described may be considered by some as an exception to this general remark; but I have little doubt that if the blood had flowed under favourable circumstances, the buffy coat would have been found; it coagulated slowly.

[‡] Armstrong on Fever.

[||] Scudamore on the Gout, p. 483.

VIII.

Observations on the Treatment of a Ruptured Tendo-Achillis.

By A. Edmondston, M. D. Fellow of the Royal College of Surgeons, Edinburgh, &c.

The following facts will, I hope, tend to illustrate the pathology of sprains, and lead to the adoption of a simple and effectual method of treating a ruptured Tendo-Achillis.

Some time ago, when dancing, I felt as if something had suddenly given way at the lower part of the calf of my right leg, accompanied by a sound like that of a person snapping his fingers smartly. Aware of what had happened, I had the precaution to pass to a chair, and immediately sat down. On examining the leg, I found that just at the lower part of the calf, a little above the point where the fibres of the gastrocnemii muscles begin to unite to form the Tendo-Achillis, there was a slight degree of redness and depression, as if something had been wanting. It was not painful, except when handled or placed in a dependent position, or when I attempted to set the foot on the ground, but the loss of the use of the leg was complete. I bathed the part in a mixture of warm water, vinegar, and spirits, the only application I could command at the time, and soon afterwards I applied the bandage, and kept the leg in the position recommended by the late Dr Monro. I felt little or no pain as long as I could adhere to his directions, but the least degree of exertion brought matters to their former state, and seemed to indicate that my cure was advancing very slowly. A little experience of its effects convinced me, that if the bandage did not support the leg uniformly and equally, it must do mischief occasionally. I saw that continued rest, in any one posture, was scarcely practicable, and, indeed, I was led to think, that the long state of inactivity recommended and followed, with a view to give time to the separated fibres to reunite, was a chief cause of the wasting and loss of strength in the leg, that frequently took place in similar cases. More than a week had already passed away without the least apparent amendment; and impressed with the apprehension of a long and tedious confinement, and anticipating some of the more disagreeable consequences which ensued from affections of this kind, I became very anxious, and often low-spirited.

Reflecting on these circumstances, it fortunately occurred to me, that straps, spread with the common adhesive plaster, might support the leg more steadily and uniformly, under every change of posture, than any bandage whatever; and I resolved to carry this view into immediate practice. Having previously shaved the leg, I applied straps along the whole of it, beginning at the ankle, and carrying them as high as the knee, of such a length as to overlap each other by several inches. I took great care to apply them in such a manner as that the pressure should be equal throughout, and over them I put on a very tight elastic worsted stocking.

In three days after the application of the straps, I could walk with the help of a stick, dragging the injured leg after the other, and resting on its heel, and although I took care, whenever I sat down, to place the limb in a horizontal posture, yet even if this were omitted, I no longer felt that sense of weight and uneasiness of which I had formerly complained. In the course of a fortnight I could walk in the awkward manner mentioned, several hours each day, without feeling pain, or becoming fatigued, although I could not rise upon the toe of the sprained leg, or advance it alternately with the other. In three weeks more I could walk slowly as well as ever, but I felt both pain and uneasiness in the part which had been injured, if I happened accidentally to use any freedom with it. I continued therefore to walk two weeks longer in this guarded manner, making in all seven weeks, from the time of the first application of the straps, when, to my great satisfaction, I found that my right leg was of the same size, shape, and strength as the other, without my having been subjected to the necessity of confining myself for a single hour during the whole time of the cure, to any particular posture. As the straps created no inconvenience, I continued the use of them a fortnight longer, when they were finally laid aside. I took off the stocking, after a few nights, regularly when I went to bed, but the straps were never removed, unless to be replaced by fresh ones, which I found to be necessary at the end of every eight days.

In all cases of what are denominated sprains, I conceive that the fibres of some muscle or muscles have been either actually ruptured, overstretched, or so much bruised, as to prevent them from being alternately contracted and relaxed, as in a state of health. Still, however, there is a tendency to motion either in the sound parts of the affected muscle, or in those muscles which are more immediately contiguous to it, and it becomes, therefore, a chief object in the treatment to give a due degree of support to the injured part, and so to preserve it in its proper position, that the affected fibres may neither be displaced, nor have their returning strength prematurely exhausted by such motions. Long continued rest, although it may give time and opportunity for the reunion of the separated fibres, diminishes the tone and natural energy of the organs, and has the effect of inducing general weakness in the system. Friction on the injured part, with stimulating substances, by exciting irritation in it, favours absorption, and thereby becomes useful in bruises, but it fails in communicating the stimulus of association, if I may be allowed the expression, which keeps alive in the muscle the habit of performing its accustomed motion. But a constant, equal, and firm support, while it keeps the injured parts in close adaptation to each other, permits the organ to exercise its functions in proportion as it recovers the faculty of doing so, and thus shortens the period of confinement, and renders the cure at last more complete.

I have employed adhesive straps repeatedly in sprains in other parts of the extremities, and always with advantage; and I have little doubt they would be eminently useful in fractures of the leg or fore-arm, when one of the bones only had been injured.

IX.

Case of Erysipelas * *of the Face, where Inflammation extended to the Brain, removed by copious Depletion.* By D. J. H. Dickson, M. D. Fellow of the Royal College of Physicians, of the Royal Society of Edinburgh, of the Linnæan Society, and Physician to the Clifton Dispensary, &c.

James Watson, a stout boy, a little more than six years of age, fell into the water when the ice was broken, during the severe weather on the 15th January, but was speedily rescued. He did not manifest any particular signs of indisposition until the 19th, when he had chills, succeeded by heat, and complained of pain in the right side of his face, which appeared red, and slightly swelled. For some days he continued listless, heavy, feverish, and occasionally sick, with loss of appetite. The redness and tumefaction increased, and spread upwards, and he became drowsy during the day, and restless and wandering at night. The neighbours told his mother it was St Anthony's Fire, and advised her to keep him warm, and to give him some physic. On the 25th, the day before I saw him, he became much worse, and application was made to the Clifton Dispensary for medical assistance. On the same evening a cupful of blood (about ℥vi.) was taken from his arm, and a cathartic powder and febrifuge mixture were prescribed.

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* That erysipelas is a contagious disease has been much disputed, and the doubts which many entertain on this head are strengthened by its infrequency, of late years, in our hospitals, since their great improvement in ventilation, cleanliness, &c. Nevertheless, there are several instances on record of the occurrence of this disease in private families, and even in pure air, which strongly countenance the opinion, that it is occasionally propagated by contagion. Of this nature are some examples, which I transmitted to the able editor of the Medico-Chirurgical Journal, and which appeared in the Number of that work for April 1819, p. 615, *et seq.*

Jan. 26th.—He appears very drowsy, and is reported to sleep much. The right side of the face and the forehead are occupied by an erysipelatous inflammation, and the eye-lids are also tumid, and nearly closed. The pulse is quick, the skin hot, and tongue white; there is nothing unusual in the appearance of the blood. The cathartic powder has not produced any effect.

℞ Hydrargyri submuriatis ℈i.
Pulveris jalapæ—℈ij. M. et divide in chartas quinque, quarûm sumat unam quarta quâque horâ donec plene dejecerit alvus.

27th.—He has passed a very bad night; either restless, and complaining loudly of his head, or lying in a state resembling coma. He is now (two P. M.) quite phrenitic; screams out violently, and attempts to get out of bed. The pulse is quick, and rather full; the erythema and swelling have increased. Has taken three powders, and had three pretty copious, dark-coloured motions.

Statim fiat venesectio, pleno rivo, ad ℥viii. Admoveantur temporibus hirudines quinque.
Vespere, si perstet dolor capitis, horam circiter nonam, repetatur sanguinis detractio prout vires;
Necnon imponatur vesicatorium scrobic. cordis horâ somni, atque continuentur pulveres ex jalapa et calomelan. ut heri.

28th.—While I was writing the prescription yesterday, he got out of bed, and falling, struck his forehead violently upon the stone floor. He became more composed after the bleeding, but, unfortunately, it was not repeated in the evening, agreeably to my directions. Three of the leech-bites, however, continued to bleed during the greater part of the night, which was passed in a comatose or delirious state, like the former, with occasional fits of screaming. The blood drawn exhibits a large proportion of crassamentum, but is not buffy. He had one large evacuation this morning, and seemed then somewhat better. The face, particularly the forehead, is much swelled, and the eyelids are quite closed; the pulse is very quick, and he now screams violently.

Quamprimum mittatur sanguis modo dicendo, et repetantur pulveris cathartici, ut antea prescripti.

29th.—On leaving the patient yesterday, I personally stated to the surgeon my opinion of the imminent danger of the case, and that my hope entirely rested upon making a powerful impression at once, by a bold and decisive repetition of the use of the lancet. I therefore requested him to carry the abstraction of blood to the greatest extent which the patient could bear, or until the cerebral affection was decidedly relieved. My wishes were promptly put in execution, and notwithstanding every resistance, by biting and struggling, in the power of the little sufferer, eight ounces of blood were speedily abstracted, when he became very faint and quiet, and the desired effect was produced. On returning in about two hours afterwards, I found him perfectly calm and collected, his face blanched, and all the symptoms of inordinate excitement apparently subdued. He has had a quiet night, is free from delirium, and in all respects much better to-day. He has made a large quantity of water this morning; the bowels are open, but the evacuations are still of a very dark colour; the pulse is quick, but soft. The blood abstracted yesterday coagulated into a firm and nearly solid mass, with very little serum,—a condition which I have frequently had occasion to observe in febrile disorders, and where venesection was considered not the less necessary, although there was no separation of fibrine.

℞ Hydrargyri submuriatis, ℈i. sacchari ℈ij. M. divide in chartas x. quarum sumat. unam 4ta quâque horâ.

30th.—He has had two free bilious-looking motions; and, except where he struck his forehead, the swelling is diminished, and he can open one eye. The pulse is still quick. Cont. calomelas.

31st.—He is very quiet, and appears to be quite sensible; but he is irritable when touched, and complains of his forehead, and of the blister. Has taken all the powders, and had two more bilious motions only. Habeat pulv. cathart. ex jalap. et calomel. h. s.

Feb. 1st.—He sleeps a good deal, and is very irritable on being moved, but is quite sensible, and free from any cerebral symptoms. The swelling of the face and eye-lids is almost gone, and the cuticle is desquamating in different places.

℞ Pulv. jalapæ gr. viii. Hydrarg. submur. gr. ij. M. mitte ij. Capt. unam vespere si opus sit.

2d.—Has had two motions of a more natural colour. His mouth is very moist with saliva, and he feels his tongue with his fingers, as if it were sore.

3d.—Is doing well. Habt. pulv. cath. h. s.

4th.—There is still some degree of arterial action, and the bowels are inactive, except when he takes a purgative.

℞ Pulv. jalapæ, gr. xij. Pulv. antimon. gr. xij. Pulv. digitalis, gr. iij. Sacchari ʒ ss. M. Div. in chart. vi. una capienda nocte maneque.

5th.—He takes sufficient nourishment, and is better in all respects, but the frontal tumour from the blow increases in size. Contr.

7th.—The bowels are open, and he makes no complaint except of his forehead. Repetantur pulveres 4to prescripti.

9th.—He sits up, and eats with appetite; his pulse is less frequent, and the bowels are open. Continuentur pulveres.

11th.—The frontal tumour is considerably larger, soft, and evidently contains matter. In all other respects he continues to improve. Omittantur pulveres. Habt. pulv. cathartic. ex jalapæ et hyd. sub. ut antea prescript. No. iij. Sign. 1 sumend. pro re nata.

Consigned to the care of the surgeon.

As the nature of the present case, and the indications of cure, were sufficiently obvious, it seems to me quite superfluous to subjoin any farther observations.

Clifton, Feb. 1820.

X.

Remarks on the Dracunculus or Guinea Worm, as communicated in a Letter, addressed to the Medical Board, Madras. By Mr William Scot, Surgeon, 1st Battalion, Madras Artillery, communicated by Alexander Kennedy, M. D. Edinburgh.

Our knowledge of the nature and habitudes of the Guinea worm appears to be less advanced, than the frequent opportunities offering for investigation would have led us to expect. We are told in books, that it is the Vena Medinensis, or Gordius Aquaticus of Linnæus. It is most commonly referred to some state, or quality of water used internally; by some to humidity, and filth, and by others it has been imputed to contagion. Dr Chisholm, the most copious and the latest writer I have seen on the subject, is decidedly of opinion, that it is engendered in the body from ova swallowed in water, although he admits, that the hint given by Dr Anderson, and others in this country, of its being deposited in the skin by the parent worm, *may* be true.

In the month of February 1815, I marched with a detachment of artillery from the Mount, to join the grand army on the banks of the Toomboodra. The detachment returned to the Mount in June of the same year. On taking charge of the 1st battalion of artillery in June of the subsequent year, I found several of those men who had been with me to the field, now ill with Guinea worm, and I was assured that a number of others of the same detachment had similarly suffered, but *not one man* who had been *constantly resident* at the Mount. From that time to the present day, I have met with the dracunculus only in men from the interior; and my mind is so satisfied on this point, that when I see a case occasionally, I naturally inquire, whence the man has come, and when he arrived, knowing well that he has been up the country, from the mere circumstance of his having the complaint.

These facts led me to suppose, that some particular rivers and waters abound with the gordius, and that while men are bathing, or standing in them, the parent animal wounds the skin, generally of the legs, and deposits its ovum; this ovum would seem to require several months to attain to maturity.

Of late some men received from the 25th dragoons have suffered from dracunculus. These men were last year long encamped on the banks of the Toomboodra. Two others, one of the horse artillery, and one from the 84th, have suffered, who have been, the one in the Mahratta country, and the other on the Toomboodra; and I am informed that a number of men of the 25th dragoons suffered from dracunculus after that service. This confirmed me in my former opinion, but I was still unable to form any satisfactory opinion on the nature and habitudes of the animal. I followed the usual routine of saturnine applications, garlick poultices, assafœtida in pills and solution, and the common mode of winding the worm out on a quill. I did not use mercury.

The extrication of the worm is always tedious. One, Lilly, observed to me, that his comrades used to find the worm come out more readily in a stream of running water. The men have some good, and some bad precepts among them, but generally they are a sort of practical proverbs, which should not be altogether neglected; and though I did suspect that Lilly's hint had some reference to a little liberty, and a stroll to the river, I directed him to immerse his leg in a bucket of water twice a-day. The first trial promised well, as about three inches of the worm came out. I then laid aside all applications but cold water, and thinking better every day of this new remedy, I at last had him brought down to my garden, and exposed his leg to the dash or stream of the Pakottah. On the third morning after this, the residue of the worm, twelve inches in length, came out with a very gentle pull. I put it into water, and examined it three hours afterwards.

The worm had no motion perceptible to the naked eye, nor could I perceive any with the microscope. It was about the thickness of the bass string of a violin, round and plump, flattened by pressure, but immediately resuming the round form; of a pearly colour throughout. On examining it with a microscope, it appeared filled with a curdly fluid, which could be moved towards either end; at the broken end it flowed out, and was milky; but, on being pressed towards the end which was last extricated, not a drop escaped, and the worm became full and tense from the accumulation. This end then was either valvular, or a true *cul de sac.* The worm was of equal volume to within the last inch, when it became a very little larger, was spirally indented, and ended in a small hooked point. On snipping off this point, the milky fluid escaped. This would seem to be the tail of the animal, but the existence or position of an anus, I could find nothing to clear up. With the microscope I could trace a transparent line running longitudinally the whole length of the animal. On inserting a tent needle into the tubular cavity, which pretty exactly filled it, I perceived that this transparent line was merely the lateral spaces between two longitudinal thick slips of white, which I suppose to be the muscular part of the animal; these are of very considerable strength, for, in this dead state, a loop of the worm supported a weight of $11\frac{3}{4}$ ounces, and was broken in one limb nearthe hand by 12 ounces avoirdupois. When the outer walls of the worm gave way, an inner filamentous body lengthened out. This again was tubular, and contained the milky fluid, and I conclude it to be the intestinal part. There were also many hair-like filaments, such as are described by Mr Patton.

I now began to suspect that the practice of applying noxious matters, in the view of killing the animal, was wrong. I concluded that my first opinion was correct, that an ovum had been deposited by the parent gordius, while the man was bathing or wading in the river, or other waters; that the time for its maturation had passed, and that for its extrication arrived; and that the animal, having now a new law of its existence to fulfil, sought delivery from its present habitation. This supposition accounts for almost every appearance which has yet been noticed; the dracunculus never gives pain till the progress of extrication begins, and its motion being so languid as generally to escape detection, we may presume that its growth is slow. Judging from the cases I have seen, and from those detailed by Messrs Bruce, Patton, and M'Gregor, several months would seem to be requisite for its full developement. The men being all exposed to the cause about the same time, especially in the instance of a ship's crew, the commencement of the *extricative* process will occur also about the same time, with sufficient variation, however, to have given rise to the idea of contagion. It accounts for the epidemic form of the complaint, as the animals exist only at certain seasons, and likewise, perhaps, for the obscurity which has hung over its origin, for the mischief is probably not felt, till the existence of the parent animals has passed away. It accounts also for the distress which is sometimes the consequence of rupture of the dracunculus; but this is not so frequent as is commonly supposed; the accident defeats the end of the process begun by the animal for its extrication, and he must have some power of repairing the rupture and renewing the process. I shall recur, however, to the subject of the secondary pain, inflammation and suppuration.

I have not had an opportunity of examining the head of the animal on its first appearance. Unless this should happen when the surgeon is present, the part will always be found shrivelled and pinched. In one Ashworth's case, the worm had been twice broken off without my seeing it; the part healed up, and then the inflammation came on again, from new efforts of the animal, on parts already diseased; but this was confined to a small spot only. At length I saw the worm; it could barely be laid hold of with the nails of my thumb and forefinger, but a slight attempt at pulling caused exquisite pain. Next day renewing my attempt, about five inches of the worm started suddenly out, firm, elastic, and spirally twisted like a cork-screw, and showing evidence, I think, of resistance at the point, to a progressive force from behind. It was so firm as to support itself for a little time perpendicularly to the limb. I did not at that time think of examining it with the microscope, but I believe the head must have been destroyed by the nails. The usual noxious remedies were applied, and the part extricated soon shrivelled up. Had I known then of the cold water, this would have been a good opportunity for using it. The farther extrication was very tedious, as is always the case about the ankle-joint. However, having seen the good effects of water in Lilly's case, I had Ashworth brought down to the Pakottah also, but the extrication was still slow, and in two or three days he broke the worm for the third time. No pain followed for several days; the orifice was kept open; at last, about an inch higher up, a small red spot appeared, and matter was formed; between this and the first opening, the communication was free to the probe. Whether I had injured the worm by the probe, I cannot say, but after daily expecting to see the skin penetrated, I was disappointed to see the process stop. There came on general inflammation, and great distress, and the mischief extended to the origin of the tendon of the gastrocnemius. Several small collections of matter formed, and I pronounced the worm to be dead. Having enlarged the opening, a considerable piece of the worm came off, evidently dead; then the skin gave way at the very uppermost point, and about an inch came out, of a tapering shape, and having now a better microscope, I found this portion to resemble in all respects the tail of Lilly's worm. The rest of the animal came away in pieces, more or less decayed, and the leg healed. In another case, where the worm had been broken, the new penetrative process went on, the worm again appeared, and was in a few days fully extricated by the stream of the Pakottah; and in another again, repeated rupture of the worm ended in its death, with consequent small suppurations, which were, however, all finally dissipated and absorbed.

No disturbance is felt until the dracunculus begins to act upon the skin. This process, if not interrupted, does not always cause much pain; and after the worm has appeared, the surrounding inflammation ceases, and the parts appear sound and natural, to the very edge of the small orifice; but if the worm has been broken, a new suppurative and penetrative process is begun, generally near the first outlet. If the parts should have recovered from the inflammation of the previous operation, the second will probably not be more painful than the first; but if still tender and inflamed, severe distress may now ensue. But it would appear, that it is when the animal dies and becomes a *dead* and foreign body, that the great mischief happens, and severe inflammation and suppurations ensue; and if this prove a fact, it is a curious illustration of the laws and relations of animal life.

Considerable confusion has arisen from authors quoting from different editions of Linnæus, and it seems also to have been an error of many writers, to suppose the species they have seen to be "the true Guinea worm." Dr Chisholm asserts, that the species he met with, was the "Gordius totus pallidus, the true Vena medinensis" of Linnæus. Now, in the edition of Linnæus which I have access to, the Vena medinensis is a species of filaria, and not a species of the gordius. There seems little reason to doubt that all these worms have the power of infesting the human body. I am disposed to refer those I have seen to the 4th species, "lacteus," which is, "G. totus albus opacus; habitat per myriades a Junio ad Septembrem in aquis." As some species affect argillaceous and brackish oozy soils, I would be disposed to refer Dr Chisholm's to that class: for, if animals of that length and bulk inhabited the clear water of the wells, they must have been now and then seen, which he says expressly was never the case.

He altogether fails in accounting for the almost universal appearance of the worm in the extremities, on the opinion, that the ova are received into the stomach; and his other opinion, that the ova themselves may possess the power of penetrating the skin, appears irreconcilable with nature. It seems much more probable, that the parent worms lived in the wet and brackish soil in which the wells were dug, and that the ova were by them deposited in the limbs and feet of the people frequenting the wells. The disease disappeared on causing the Negroes to use the water of tanks or cisterns; but these, being artificial, would doubtless be placed near the habitations, in a dry and elevated spot, in which soil the gordius was not likely to be found. The wells, on the contrary, were near the sea, and so low as to be under the influence of the tide. Had the Negroes continued to frequent them for the purpose of washing, it seems probable they would still have been infested by the worm; but this was effectually prevented, for the wells "were all filled up."

The fourth species, or G. lacteus, abounds once in the year only. It appears also, from the accounts of Dubois and Dr Chisholm, that the disease becomes epidemic once a-year: hence we may conclude, that these animals, having deposited their ova, cease thereafter to exist. The periods of their reappearance probably depend, in tropical regions, on the rains, with respect to the argillaceous and some other species; and on heat simply, with respect to others. If the dracunculus be in reality produced by deposition of an ovum in the skin, and about a year be the term of its existence; and further, if their appearance depends on the rains, which last three or four months, or on heat, which is at the greatest for the same length of time,—and Linnæus expressly says of the lacteus, " a Junio ad Septembrem," we may hence be led to form some conjecture of the time when, in the human body, it will begin the extricative process. Now we find, by Mr Patton's account, that the crew of the Cirencester sailed from Bombay on the 15th August, and there they must have been exposed to the causes of dracunculus during the rainy season. The period of the ship's arrival in China is not noted, but " the last of the liberty men came on board in December." The first case appeared on the 30th May, and the last on the 9th of August; all the rest happening in June and July. If the cause be referred to Bombay, the animal must have begun to appear towards the close of its existence only: but if the cause be referred to China, it must have begun to appear in about six months. The dracunculus, according to Dr Chisholm's account, becomes epidemic in Grenada towards the end of November, and ceases in February. In the 88th regiment, Dr M'Gregor found the disease very prevalent on shipboard during the months of March and April, 263 cases happening in these months, while the numbers before and after that period were very few; viz. from September to 1st March twelve cases, and in May eight cases; but we have no previous history of the regiment. According to Dubois, the dracunculus becomes epidemic in the southern and central parts of the Peninsula in the months of December, January, and February. No correct inferences, however, can be drawn from these imperfect data.

As my opportunities for investigating this subject must at all times be extremely limited at this station, and are for the present altogether at a close, I have ventured to bring these somewhat crude remarks to the attention of the Board, in the view of seeing more correct and valuable information elicited in quarters where the dracunculus prevails.

I shall conclude this paper by recapitulating the points chiefly touched upon, by bringing them forward rather in the shape of queries, or probable conjectures, than as truths. And, 1st, with regard to the nature and habitudes of the animal, Is not the human body liable to be infested with all the different species of Gordius or Filaria? Are not the ova of these animals deposited in the skin by the parent animals, while the parts are immersed in water, or in muddy, argillaceous, or brackish, oozy soils? Do not these animals perish annually? What is the term of their existence in the vermicular form? May we suppose that their developement is hastened by the more favourable nidus afforded by the human body? At what period are we to suppose that the animal begins the extricative process? Is it on reaching its full growth, or before it? Is it necessary that the animals should exist for several months in the full grown state, in order to copulate and bring forth their ova?

The solution of some of these queries might be afforded by a patient and careful investigation of the soils and waters where dracunculus abounds, especially of the soil round brackish wells and of beds of tanks. The time when the investigation should most probably be successful is not so easily determined. If, as we have supposed, the worms of this year be produced from the ova of the former year, the search should begin some time before the usual epidemic period arrives, and be continued through it.

2d, With respect to medical practice, may we conclude, that the mere presence of the dracunculus is not productive of any pain, but that pain and inflammation are the effects of the animal's attempt to escape; that the animal's efforts are naturally directed towards extrication; and that whatever impedes these efforts will be hurtful, and whatever facilitates them will be beneficial; that, after the pain and inflammation attending the first penetration of the skin, the extrication goes on without causing much distress, if not injudiciously interrupted; that the worm may be broken once or twice, without causing more distress than usually attends the first penetration; that it is on the *death* only of the worm that the pain, inflammation, and suppurations ensue to any alarming extent; and hence, that our practice should be directed to the preservation of the life of the worm, and to gently soliciting its extrication; and, in this view, cold water, or a stream of water, or poultices of argillaceous soil, or the black ooze of brackish soils, and such substances, should form our only applications;—that the worm should not be destroyed, by winding it on a quill, but left loose; and that all internal remedies in the view of killing it should be avoided?

St Thomas's Mount, 6th August 1819.

NOTE BY DR KENNEDY.

When communicating to you the Remarks of my friend, Mr Scot, upon the Dracunculus, transmitted for insertion in your valuable Journal, it appears to me, that my mentioning a method by which I have seen it extracted, by a native Indian practitioner, may increase the value of Mr Scot's communication, and perhaps prove useful in places where the Guinea worm is an object of practice.

nis; then with a bistoury opened the peritonæum. I then made a small incision with the point of a scalpel through the substance of the uterus, at the upper extremity of the wound, through which I introduced the forefinger of the left hand; and, making the finger a director, with one stroke of a blunt-pointed curved bistoury, divided the uterus the whole extent of the first incision. A gush of blood flowed from the vessels in the substance of the uterus. The placenta presented itself, which I immediately detached and brought away; then, feeling for the feet of the child, brought them also out. The uterus contracted forcibly round the body of the infant, and by the time the arms were extracted, had closely encircled its neck. To obviate this difficulty, I introduced one finger after another along the neck and occiput of the child, until my left hand was entirely within the uterus; and then by gently pulling the body with the right hand, while the left acted as a lever, at once expelled the head; the uterus instantly contracted, and the bowels rushed out. After some vain attempts were made to reduce them, the edges of the wound were brought together by the continued suture, and the bowels were gradually reduced as the wound was diminished in size. Adhesive straps were then applied to support the stitches; a compress of lint was laid along each side of the wound, and over all a pledget of simple dressing: the whole was secured by a bandage.

Immediately after the operation, which the patient endured with great firmness, she requested to be laid on her left side, which was done. Except a little heat in the wound she complained of no uneasiness. She now took a little wine and water, and about ten minutes after 50 drops of Tinct. opii, which she very soon after vomited. The pulse could be felt at the wrist, but could not be numbered; face pale; no pain.

I proposed to the medical gentlemen present that we should watch by the patient's bed-side for the first 24 hours, should she survive so long. They readily agreed to relieve each other every two hours during that period. Mr Monteath and I remained with her till three o'clock. When we left her, she complained of no pain any where; pulse same as immediately after the operation; has taken a little more wine and water.

The following are the reports of the gentlemen who watched by her:

" 4 o'clock, P. M.—Pulse 162; slight thirst; no pain; lies quiet and easy; slight coldness of the feet; discharge per vaginam moderate.

" 5 o'clock, P. M.—Pulse 162, indistinct; complains of no uneasiness; breathing somewhat difficult; has passed urine; skin cold and moist; lips pale; discharge very little.

"6 o'clock, P. M.—Wished to be turned to the left side, which was done without occasioning more pain to her than usual; complains of no pain; extremities cold; pulse cannot be felt at the wrist. Ordered her a table-spoonful of Port wine warmed.

"9 o'clock, P. M.—As in last report; except that the pulse can be distinctly felt at the wrist, which, as nearly as can be judged, ranges from 135 to 145; lochia natural. Having felt the last quantity of wine grateful, ordered to have it repeated; and, in consequence of the coldness of her extremities still continuing, to have bottles of warm water applied to her feet.

"12 o'clock, midnight.—Took a little panada about an hour ago, which she relished; pulse indistinct; complains of considerable pain in the right side, which was relieved by turning her to the other side. On account of considerable restlessness, gave her 30 drops of Tinct. opii.

"3 o'clock, A. M.—Pulse same as in last report; considerable restlessness, and slight delirium; passed urine as usual.

"6 o'clock, A. M.—Pulse 150; considerable thirst and restlessness; looks ill; discharge moderate; delirium gone off; considerable sickness, and tendency to vomit; extremities cold.

"Half past 7 o'clock, A. M.—Very restless; wishes to have her head turned to the other end of the bed, which was done; pulse cannot be felt at the wrist; talks incoherently, but, when questioned, answers distinctly; lochia moderate; seems fast sinking.

"Died at 9 o'clock, A. M."

Dissection.—On Monday, at 1 o'clock, P. M. the body was examined. External appearance, great deformity and extreme emaciation. On removing the dressings, the abdomen was soft and of its natural colour; no traces of inflammation were discernible. The edges of the wound were found to be in exact apposition. We next carefully removed the stitches; and, upon gently separating the edges of the wound, we were surprised to find that, in the short space of 20 hours, adhesion had generally taken place; so much so, that it required some degree of force to separate the edges of the wound. No marks of inflammation were observed on the peritonæum; the bowels were of their natural colour; the uterus did not seem larger than what is natural at the same period after delivery; the sides of the incision were tumid, of a dark purplish colour, and a little separated from each other; no coagulum was found in the cavity of the uterus; the abdominal cavity contained about two ounces of bloody serum.

Should I ever be called upon again to perform this terrible operation, I would conduct it in every step similar to the above, except in reducing the intestines. In all cases that must be difficult. In this, from the extreme deformity of the patient, it was physically impossible, until the wound was diminished in size. In any case, it appears to me, that the patient would run less risk, and it would be easier for the operator, if, instead of reducing the bowels, as recommended by those authors who have written on the subject, he were to cause an assistant to support them in the palms of his hands, until the edges of the wound were brought together by the continued suture; and, as the wound is diminished in size, to reduce them gradually until the entire reduction is effected. In this way, the bowels would be reduced with the least possible degree of handling; a matter of the utmost consequence to organs of so delicate a structure, and which perform functions of such importance in the animal economy. Those gentlemen who have performed the Cæsarian section will, I am sure, see the propriety of the practice now recommended; and those who may perform it hereafter will not only save time, and give less pain to the patient, but will thereby greatly increase her chance of life.

This is now, I think, the 24th time that the Cæsarian operation has been performed in Great Britain; one woman out of that number only has been saved,* but 12 children have been preserved. On the Continent, however, where the operation is performed oftener, and frequently in more favourable circumstances, the number of fatal cases is much less. The Records of Medicine furnish us with 231 cases of this operation; 139 have been stated to have proved successful. In estimating the hazard of the case, we would err exceedingly were we to confide in this great proportion of recoveries. The inherent dangers of the operation must be always greatly heightened by the circumstances which render it necessary, and the little success which has attended it in this country will make the accoucheur anxious to have his own opinion as to the necessity of the operation confirmed by that of as many of his professional brethren as possible ere he proceed. By this delay, time is lost, the patient's strength exhausted, and the chance of success diminished. But although this delay may in a great measure account for the fatality attending the Cæsarian operation in this country, yet in some cases it has been productive of good. A striking instance of this was manifested in the delivery of this unfortunate woman in 1818. Neither Mr Barlas nor I could at that time ascertain what part of the child's body presented, by reason of the great deformity of the brim of the pelvis. The outlet was also very much contracted, and offered an insuperable barrier to the complete examination of the brim; to obviate which, I was obliged to force my whole hand within the vagina. By this accidental circumstance, I ascertained that the bones were soft, and yielded to pressure; otherwise we would have certainly recommended the Cæsarian section at that time; and I am satisfied, that the examination of the pelvis *post mortem*, had the operation been then performed, would have completely justified my proceedings.* But although it is a fact that the delay that has been thus occasioned has been prejudicial to the success of the operation in this country, it is no less true that the wantonness with which it is had recourse to on the Continent is less justifiable, and I am not sure but it has been more destructive of human life than our tardiness. Bandeloque informs us of one woman who underwent the Cæsarian operation and recovered, but her subsequent labour was easy and natural; and of another, who expelled her child by the natural pains after she was laid upon the table, while the surgeons were preparing their instruments for this dreadful operation. When we read of cases like these, I do not see how either those who advised, or those who performed the operation, can be acquitted of the charges of rashness and cruelty.

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* Vide a case by Mr Barlow in Medical Records and Researches, p. 154.

According to Dr Osborne, the Cæsarian operation can seldom be necessary; for he contends, that if there be an inch and a half between the pubes and sacrum, or on either side, the head may be broken down, so as to admit of delivery. And he has farther told the medical world, that he himself brought a child through a pelvis, the widest side of which was only one inch and three quarters broad, and not more than two inches long, by breaking down the cranium, and turning the basis of the skull sideways. Whatever may be thought of this statement, it has never been asserted that delivery was practicable, if the space in all parts of the pelvis be less than that above stated. That such a case may occur, is demonstrated by the pelvis of our patient, the greatest conjugate diameter of which was only one inch and one twentieth, as will be seen by the accompanying sketch.

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* It may be thought that I here speak too decidedly of the consequences of the operation had it been performed at that time; but the patient's whole frame was so reduced, and the vital powers so much exhausted, that it was impossible for those who saw her, either at that time, or when the operation was performed, to anticipate any thing but an unfavourable result, in so far as regarded her life.

All circumstances rendered the case of this unfortunate woman a most hopeless one. She had laboured under *mollities ossium* for eight years, and, for the last four, had been chiefly confined to bed, and could not move her body from the position in which it was laid without assistance. Her appetite was much impaired, extreme emaciation, and great deformity. When she was viewed in bed, previous to the operation, her appearance was more like that of an Egyptian mummy than that of a human creature who lived and breathed. It has been seen above, that the patient's pulse beat 146 strokes per minute the day previous to that on which the operation was performed. Continued action of the heart to that extent has, in most cases, been regarded as a sure precursor of dissolution.

Appearances on dissection afforded strong presumption, that had her disease been less, and her strength greater, she would have recovered. For, there was no tension of the abdomen, nor appearance of inflammation in any organ, * the uterus excepted, and there it was but trifling, and adhesion in the external wound had generally taken place. This case affords a satisfactory answer to the objection against the incision being made in the linea alba, from the fear that the wound would be less likely to heal by the first intention, than in the more muscular parts of the parietes of the abdomen. When the incision is made in the linea alba, the operation is not impeded by taking up arteries; in our case there was no hæmorrhage whatever from the wound in the parietes abdominis. It was the shock of the operation, and the hæmorrhage, which was indeed but small, (about eight or nine ounces,) but which her exhausted frame could but ill spare, that appeared to us to be the cause of her death.

The history of this case holds out but little inducement to the performance of the Cæsarian operation, in so far as it regards the mother, but it was a case in which no alternative was left; had it not been had recourse to, both lives must certainly have been lost. By it that of the child † was saved, and the mother had the only chance of life which her melancholy situation admitted.

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* Perhaps the extreme emaciation of the patient may account for the almost total want of appearances of inflammation.

† A fine full-grown female infant, who is doing remarkably well.

EXPLANATION OF THE PLATE.

Fig. I. A diagram, intended to convey a general notion of the figure of the distorted pelvis.

1. A line drawn at the widest part on the left side, from the fifth lumbar vertebra to the ascending ramus of the pubes, and measuring just one inch.

2. A line drawn at the widest part on the right side, and measuring nineteen-twentieths of an inch.

3, 4, 5. The fifth, fourth, and part of the third lumbar vertebræ, which are sunk down, and bent forward within the pelvis.

6. A line drawn betwixt the ascending rami of the pubes, forming the brim of the pelvis, and measuring six-twentieths of an inch.

7. A line drawn from the fifth lumbar vertebra to line 6, and measuring one inch and one-twentieth.

8. 8. The sacrum bent forward upon itself, a part of which lies in contact with the fore part of the fifth lumbar vertebra.

9. The left ascending ramus of the pubes, which is folded over above the right ascending ramus.

10. That part of the os pubis which forms the superior anterior part of the thyroid hole, which is folded back upon itself so as to form the crescent 1, 9, 10.

11. 11. The symphysis pubis.

12. 12. The tubera ischii.

13. The right thyroid hole.

14. Right os femoris.

15. Left os femoris.

Fig. II. Represents the shape of the brim of the pelvis, and the uncommon degree of deformity of the several bones forming it.

A A. Alæ ilii folded in such a manner as to form nearly a semicircle, the ends of which converge towards the junction of the ilii with the sacrum, and diverge towards the superior anterior process.

B. Head of the right femur, which, with the acetabulum, is higher, and nearer the mesial line than the left, by reason of the ascending ramus of the pubes on the right side, which is bent so as to lie under that of the right.

D, E, F. The ossa pubis folded, and bent upon themselves, so as to be thrown completely out of the pelvis.

G. Body of the third lumbar vertebra.

H. Part of the os sacrum, as seen through the pelvis.

I. Part of the coccyx with its apex, as seen through the pelvis.

K. The spinous process of the ischium, as seen through the pelvis.

The distortion of the outlet of the pelvis is no less remarkable than that of the brim. A line drawn from the spinous process of the ischium to the point of the coccyx on the left side, measures only four-tenths of an inch, and on the right side, two inches and one-tenth. The space between the tuberosities of the ischia is eleven-twentieths of an inch. From the point of the sacrum to the spine of the ischium, right side, one inch and a quarter. From the same points on the left side, one inch and seven-twentieths. The sacrum seems doubled up upon itself, the fold of which rests upon the fifth lumbar vertebra.

Perth, Nov. 1, 1820.

Dr. Henderson's Case

Fig. 1.

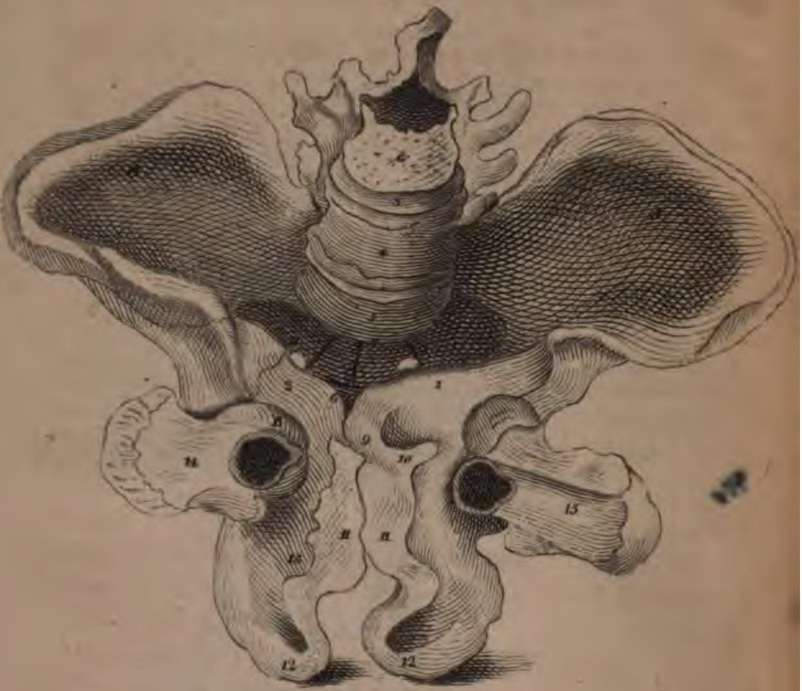
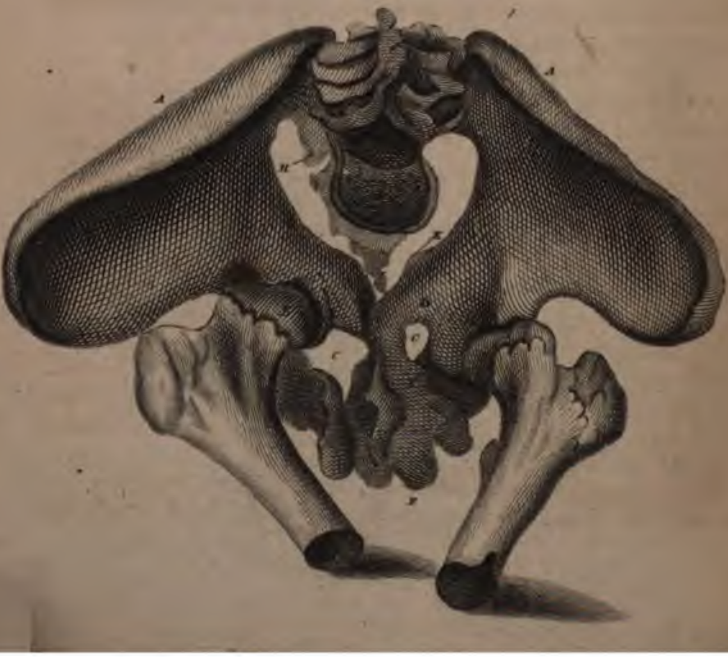


Fig. 2



PART II.

CRITICAL ANALYSIS.

I.

A History of the Variolous Epidemic which occurred in Norwich in the year 1819, *and destroyed* 530 *individuals: with an Estimate of the Protection afforded by Vaccination, and a Review of Past and Present Opinions upon Chicken-Pox, and Modified Small-Pox.* By JOHN CROSS, Member of the Royal College of Surgeons, &c. 8vo. Pp. 296. London, 1820.

MUCH as the attention of our readers has been occupied, for the last two years, with documents regarding the subject of this work, we are confident that they will not regret our devoting a small portion of this Number to an analysis of its contents. It records the ravages of an epidemic small-pox, which has caused a greater mortality, in proportion to the population of the place where it appeared, than any other that has occurred in this country for many years, and much greater than we had hoped the small-pox was destined ever again to cause among the countrymen of Jenner. It furnishes very satisfactory documents to illustrate the protecting power of the cow-pox, and to elucidate other important, although subordinate questions, connected with the history of these diseases; and the industry with which Mr Cross has collected, and the intelligence and judgment with which he has arranged and generalized the most important facts which the epidemic presented, entitle him to the thanks of the profession, and deserve to be generally known.

The absence of small-pox for years together, from various towns or districts of this country, which had been constantly infested with it before the introduction of vaccination, appears to have been owing more to the great diminution of the practice of inoculation for the small-pox, by which the sources of the disease had formerly been kept up, than to the prevalence of the practice of vaccination, by which a number of persons are now protected against the contagion. The town of Norwich, for example, appears, from Mr Cross's statements, to have been nearly or entirely free from small-pox from 1805 till 1807, again from 1809 till 1813, and again from 1813 till the end of summer 1818, when it was introduced by a girl lately arrived from York with her parents, who had been exposed to the infection on the road, and fell ill of the disease in Norwich. Several cases took their origin from this in the latter part of 1818, two of which were fatal. I nJanuary 1819, a druggist inoculated three children for small-pox, thereby helping to keep up the contagion. In February the disease got into one of the great charity schools; from this it extended to all quarters of the city, and "laid the foundation," says Mr Cross, "for the most extensive destruction of human life that has ever, I believe, taken place in Norwich in the same space of time, from any other cause than the plague."

In this year 530 persons died of small-pox within the limits of the bills of mortality, which do not include several hamlets in the immediate neighbourhood, where it also prevailed. Mr Cross adds, that having found, by observation derived from various sources, that about one in six of all who were affected with the disease died of it, he is satisfied that "considerably above 3000 individuals, or a *thirteenth part* of the whole population of Norwich, had the small-pox that year."

Mr Cross addressed a circular letter, containing queries regarding small-pox, to 93 practitioners of the county of Norfolk, and the adjoining part of Suffolk, 82 of whom stated in reply, that they had seen small-pox repeatedly in the year 1819, most of them to a great extent, of which we may judge from the fact, that 28 of the 82 had attended 598 patients in the casual disease, of whom 97 died, and had heard of 180 more deaths in persons whom they did not see, in the districts where they reside.

From these statements it appears that, great as was the number of deaths, the mortality of the disease, in proportion to the numbers affected with it, was not unusual. Of the unprotected persons seized with small-pox in Scotland during the late epidemic, and of whom Dr Thomson received accounts, one in four died; and when we take into consideration the practice generally employed at Norwich by the old women, who were the most popular practitioners among the poor, * we may infer, that the contagion of the epidemic here recorded was probably *less* malignant than that which has been lately prevalent in Scotland. It is important to take every opportunity of impressing on the public mind the magnitude of the evil, the antidote of which it is the principal object of the work before us, and of all honest and intelligent practitioners, who interest themselves in the subject, to recommend.

In the present article, we shall lay before our readers what appears to us to be the most important information contained in this volume, as illustrating,—*first*, the history of small-pox itself; *secondly*, the protection afforded by cow-pox; *thirdly*, the expediency of public measures to preserve the community from small-pox; and, *lastly*, the question of the identity of small-pox and chicken-pox.

I. The history of the epidemic at Norwich exemplified the observation which has been often made,—has been confirmed in this city, both last year and this,—and is highly important with a view to the prevention of the disease,—of its *great increase in the summer months*. "Est ut plurimum epidemicus, verno tempore primo incipiens, æstate crescens, languens autumno, hyeme sequente fere cedens, vere iterum eodem ordine rediturus." † Of the 530 deaths, 298 occurred in June and July; and "in June, when the greatest mortality occurred, 43 were buried from small-pox in one week." In like manner, in the town of Lynn, "the small-pox was introduced early in 1819, but did not spread with rapidity until the warm season." The knowledge of this general fact, as we are informed by Dr Monro, led the Bramins of India to begin inoculating for the small-pox in the month of February; and if the inhabitants of Norwich could have been made duly aware of this fact at the time when the disease began to spread in the year 1819, and had *then* taken the same measures to insure the protection of all who were liable to small-pox, which they actually took at a subsequent period of the epidemic, the statements contained in the present volume are of themselves sufficient to shew, that they would have effectually arrested its progress.

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* "The treatment pursued, when not interrupted by professional interference, was, in a few words, as follows: At the commencement, to set the object before a large fire, and supply it plentifully with saffron and brandy, to bring out the eruption; during the whole of the next stage, to keep it in bed, covered with flannel, and even the bed-curtains pinned together, to prevent a breath of air; to allow no change of linen for ten or more days, until the eruption had turned; and to regard the best symptom to be a costive state of the bowels during the whole course of the disease." (P. 11.)

† Boerhaave, Aphor.

Mr Cross states farther, what we believe is likewise the general case, that not only "the state of the atmosphere, during May, June, and July, disposed the system to receive the infection on slighter exposure than at any previous period since the introduction of the disease," but likewise "the virulence of the contagion seemed to keep pace with the increasing prevalence of the disease, and to be heightened in proportion to the number suffering from it. The first petechial case which I saw was in the latter end of May. After three or four months, the petechial forms were no longer observable, and the epidemic declined, by getting milder, as well as less frequent."

The epidemic appears to have presented in Norwich, as it did in Scotland, a great many varieties; but there seem to have been a greater number of petechial cases, generally attended with bloody diarrhœa, all of which proved fatal, although Mr Cross saw several examples of recovery where the pustules assumed a dark or purple hue, from their contents being mixed with blood.

Mr Cross saw a number of cases of fever with petechiæ, but without any variolous eruption, in the months of May, June, and July, when the epidemic was at the worst, all of which proved fatal. "The victims were mostly children, enfeebled by scrofula, or some other disease;" and, as several were seized with this disease, while others in the same family were suffering from small-pox, and as *no case of it occurred during the summer, in any one who had previously gone through small-pox or cow-pox*, he is very much inclined to ascribe every case of it to the variolous contagion. p. 67.

It appeared in this epidemic, as is usual, that a certain proportion of persons, although fully exposed and unprotected, resisted the contagion. To ascertain this number, as well as other points in the history of the disease, Mr Cross adopted a plan which we would strongly recommend to others, who may have similar opportunities. He kept a regular register of the effects produced by the contagion in 112 families, comprising 603 persons, into which it was introduced. In these families 297 had had small-pox before, and escaped, 91 had been vaccinated and escaped, excepting three, who had a mild disease, to be mentioned afterwards,—200, who were unprotected, took small-pox,—and 15, although unprotected, escaped, of which number 10 had been likewise exposed to the contagion before, with impunity. A collection of a few registers, kept with equal care, and on the same plan, would weigh more with the future historian of small-pox and cow-pox, than many volumes of detached observations and general reasonings.

Another fact was likewise completely ascertained by Mr Cross, which is of very considerable practical importance, and which we do not recollect to have seen so unequivocally demonstrated elsewhere,—that the small-pox occurred, in several instances, in adults, "who had *at various times before resisted* the intimate and continued exposure to the contagion of that disease, and supposed, with some appearance of reason, that they should for ever be free from it." (p. 15.) He states, in farther confirmation of the possibility of this, that his father-in-law, Mr Bayly, surgeon, had been informed by one of the Suttons, with whom he was well acquainted, that "a man, who believed himself to have had the small-pox, lived for *twelve* years as a nurse in the establishment for the reception of inoculated patients, which the Suttons had near Norwich, continually waiting on the patients who were undergoing the disease; and at the end of that time he caught the small-pox, of which he died."

These facts are important, not only because they point out the danger of trusting to this kind of security against small-pox, but also, because they take away the force of the argument in favour of the supposition of the protecting power of cow-pox wearing out in time, which is drawn from the fact, of vaccinated persons being repeatedly exposed to the contagion with impunity, and nevertheless taking the modified disease on a subsequent exposure, as was the case with the son of Dr Hennen.* Accordingly, we are not surprised to find it stated by Mr Cross, and some of his correspondents, that they had seen modified small-pox in vaccinated persons, who had been revaccinated, and also inoculated with small-pox, without effect. pp. 106 and 285.

Mr Cross gives (p. 16 and 18) two very satisfactory cases of *regular secondary small-pox*, one after the natural, the other after the inoculated disease. Several other supposed cases of secondary small-pox occurred, but the evidence of the nature of the first eruption was not so satisfactory.† Ten of Mr Cross's correspondents, although not solicited on the subject, sent him information of cases of secondary small-pox, which had occurred to them both before and during the year 1819. Of these, three are stated to have been fatal. (p. 272.) Mr Cross met also with a few cases, which he conceived to be *modified small-pox after small-pox*, (p. 75 and 76;) and one of his correspondents mentions four of that kind, (p. 274.) When it is considered that a much greater number of people at Norwich appear to have been protected by small-pox than by cow-pox, his statements on this head appear to confirm the opinion we formerly hazarded, that this occurrence will be found considerably less common than the modified small-pox after cow-pox.

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* See Vol. XIV. p. 425.

† In one of these the disease was fatal. The parents of the child had conceived it to be perfectly safe, from the appearance of the previous eruption, which had left several scars.

The only observation of Mr Cross on the appearance of the eruption of small-pox, which we shall quote, is, that of "vesicles formed of simple elevations of the cuticle, being often intermixed with the most regular pocks," in unmodified cases, "and small incomplete pocks often arising near them, which never present the indented character." (p. 139.) These vesicles we have often seen, and we would add, that they are often filled up two or three days before the principal crop.

II. In regard to the degree of protection given by vaccination at Norwich, the facts here recorded agree very exactly with what has been observed in Scotland. Mr Cross discovered in all, after "searching for such cases in every quarter of the city, and sparing no pains to examine all reports of such events to the bottom," six cases, in Norwich, where small-pox *ran its usual course in persons who had been vaccinated*, had been seen by medical men during the progress of the cow-pox, and had scars on their arms, which seem in all but one to have had the usual appearance. (p. 59, *et seq.*) Of these six two were fatal, one on the 11th day, the disease being confluent, the other on the 8th day, the pustules being intermixed with many petechiæ. Six of Mr Cross's correspondents also mentioned having seen regular small-pox after cow-pox, which was recovered from, (p. 281;) and five cases were reported to him of fatal small-pox after cow-pox, but there was evidence of the cow-pox having been regular, and left marks, only in two of these. (p. 277.) We mentioned in our review of Dr Thomson's work, several fatal cases having occurred after vaccination in Scotland, one of which was also a petechial case. Another was likewise anomalous; and of four others the particulars were not ascertained. Dr Thomson himself had not met with a single case of small-pox after cow-pox, which was not modified; but Dr Ramsay of Dundee, Mr Thomson of Alloa, and Mr Dawson of Liverpool, (three of Dr Monro's correspondents,) mentioned having seen the small-pox run its regular course, after what had been conceived by medical men to have been perfect vaccination; and we have ourselves seen three cases of that kind, in all of which there was satisfactory evidence of the vaccination having been deemed perfect by medical men at the time when it was performed, and good marks remained on the arms. But we have also seen three cases, in which there was equally satisfactory evidence of regular small-pox having occurred for the second time; and as we now know, that the latter occurrence is by no means anomalous, it would be strange if we did not occasionally meet with the former. We agree, therefore, with Mr Cross in thinking, that the fatal cases he records, " can have no weight against the practice of vaccination, when compared with 10,000 vaccinated individuals living in the midst of a contaminated atmosphere; with 530 deaths among little more than 3000 who had neglected to be vaccinated; and with the occasional occurrence of regular small-pox in those who formerly had the disease."

Cases of *modified small-pox, after cow-pox*, have occurred in Mr Cross's observation, certainly less frequently than in some parts of Scotland, particularly at New Lanark, (see our number for April, p. 228,) but probably as frequently, in proportion to the number exposed to the infection, as in Edinburgh. After deducting a certain number of cases of eruptive disease, which he conceives to have been chicken-pox, Mr Cross has notes of more than thirty cases, which he is satisfied were modified small-pox, (p. 82;) and upwards of 100 cases of the same kind were mentioned to him by his correspondents, (p. 280.) In regard to the proportion of vaccinated persons exposed to the infection, who take this disease, he professes himself unable to speak with confidence. Of 91 vaccinated persons in the 112 families to which he paid particular attention, three had eruptive complaints at the time of his attendance, two of which he judged to be modified small-pox, and three more had probably the same disease towards the end of the year, (p. 36;) and, of 420 other vaccinated persons, 11 had eruptive complaints, most of which were probably of the same nature, (p. 38.) In all, he thinks, " not more than one in twenty persons will be in any way affected by the most intimate exposure to small-pox, and less than one in fifty will have the disease in a form answering to the generally received description of modified small-pox." He observes very justly, that, " at the present day, no documents can possess much value, unless they help to ascertain the proportion in which the vaccinated are likely to be affected by small-pox contagion. If this object is not kept in view, a writer may collect instances of failure or of protection, without answering any other purpose than to shew the possibility of the one or the other, and without establishing which is the general rule, and which the exception."

Mr Cross devotes a larger portion of his work than we should have thought necessary (p. 77 to 122, and p. 182 to 192) to a circumstantial account of cases, and afterwards to general descriptions, of this modified small-pox, of which we do not think it necessary to say more, than that these statements agree perfectly with those which we have already inserted in different numbers of our Journal. The 15th case (p. 106) is a striking example of the most important of all the peculiarities attending this form of the disease, the absence of secondary fever. The only remark we have to make on these descriptions is one which applies to those of many other medical men, who have become authors since the discrimination of cutaneous eruptions has been an object of more study than formerly,—that the appearances of the eruptions are detailed with a degree of minuteness which is not only unnecessary, but in some instances oppressive; while too little attention is paid to the symptoms of the general fever.

In fixing the characters by which this form of the disease may be certainly known, Mr Cross lays much stress on the *indented character* of the pocks, seen not in all, but in some of them, on the 2d, 3d, or 4th day of the eruption, while the fluid is clear, and *before any crusting begins*. This character, he says, is to be seen in most cases of the disease, and in all in which the eruption has been abundant, or the symptoms urgent. Hence, although he does not conclude that every eruption which does not shew this character *is not* small-pox, he concludes (we believe quite correctly) that every one which does shew it *is* small-pox. In some milder cases, the vesicles "have never advanced so far as to present indented pocks," and have dried up in three or four days, without forming regular solid scabs; in several cases a rash has preceded or accompanied the eruption of modified small-pox; "and the mildest effect of the variolous contagion seems to be shewn in the production of a rash and sore throat, without any eruption of vesicles, or of febrile symptoms for a day or two, that subside without the appearance of any affection of the skin." All this agrees perfectly with our own observations.

Mr Cross quotes an account of an epidemic small-pox in the kingdom of Wirtemberg, in the years 1814, 15, 16, and 17, collected and arranged by Dr Elsasser, after an examination of all the official returns of the medical men to the government, by which it appears, that precisely similar effects have been produced there as in this country, by the contagion of small-pox acting on the vaccinated.

"A few cases of regular small-pox after vaccination are allowed to have occurred; but, while tens of thousands of the vaccinated escaped, two only were ascertained to have died of the small-pox, who had been registered as having passed properly through the cow-pox. The variolous contagion, acting on a small proportion of the vaccinated, produced a mitigated or modified disease—the eruption not attaining more than half the size of the regular small-pox, being irregular as to appearance and progress, presenting in some pocks the indentation, unattended by secondary fever, and leaving blotches with convex surfaces on the falling off of the scabs. The interval between the vaccination and the occurrence of this eruptive disease varied from five to fifteen years, and was seldom less than the former number." —P. 180.

Precisely similar facts were observed in an epidemic small-pox which occurred at Rotterdam in 1817-18, and is described by Dr Hodenpyl. (P. 178-9.)

We presume none of our readers can think it necessary for us to consider the question, whether the eruptions thus described proceeded from the contagion of the small-pox or not? We may merely mention, that Mr Cross and some of his correspondents resorted to the unequivocal proof of inoculating unprotected children with the matter of this eruption, and thereby produced in them regular small-pox. (See p. 84, 87, and 284.) The results of these trials, of those of Dr Hennen and others recorded in Dr Monro's work, (chap. vi.) and of some similar ones made in London, (see Medical Repository, Vol. XIII. p. 228,) are amply sufficient to set this question at rest for ever.

In regard to the question, whether the power of cow-pox over small-pox is diminished by time? we have not so precise information, either in this or in any other of the late works on the subject, as might perhaps have been expected. All that is here said on the subject amounts to this,—that the modified disease has been seen at all distances of time, from a few weeks up to 20 years after vaccination; that the severest cases of it have been more than six years after it, (p. 198, 199, and p. 284, 285;) but that, at the distance of 14 and 20 years, the modifying power was unequivocally shewn, particularly by the absence of secondary fever, and the rapid convalescence, notwithstanding the great load of eruption. Three interesting cases, illustrating this point, are given at great length. (Nos. 14, 15, and 16, p. 101, *et seq.*)

Mr Cross has made some observations, which are both new and important, on small-pox and cow-pox occurring together in the same individual. (Chapter iii. Part 1st.) It has been generally supposed, that when the areola has formed around vaccine vesicles, the constitutional effect is produced, and the patient is as effectually protected against small-pox as he will ever be. It was known, that the eruption of small-pox appearing within two or three days after vaccination arrests the progress of the vaccine vesicle, prevents the formation of the areola, and proceeds in its own progress without modification. In most cases, where the eruption of small-pox has come out at a later period of the progress of cow-pox, it has been much mitigated; and the sixth day after vaccination has been stated as the latest at which small-pox can appear, and afterwards run its regular course. Mr Cross, however, although he found that small-pox coming out late in the progress of the vaccine vesicle was *generally* modified, (thirty cases having occurred to him without one death,) yet has given three cases, seen by himself, and a fourth, seen by a friend, in which small-pox appeared on the 9th, 10th, 11th, and 12th day after vaccination,—that is, *after* the areola had formed,—yet run its regular course, and in the last instance (seen by his friend) was fatal. * Although, therefore, he most justly recommends to surgeons to vaccinate in situations where it is possible that the variolous contagion may have been already caught, as the small-pox, if not prevented, is *most likely* to be mitigated; yet he warns them, that no decisive opinion of protection by cow-pox can be given until the scab is about to fall off. And he very properly observes, that the mind of every surgeon, who vaccinates in these circumstances, should be strongly impressed with the possibility of small-pox coming out late in the progress of cow pox, running the usual course, and even proving fatal, notwithstanding that the cow-pox is going on regularly and properly; otherwise such a case may very probably be "mentioned as a failure of vaccination, and become the source of much injury to the public."

In regard to the important question of the cause of the occurrence of modified small-pox in a portion of vaccinated persons, Mr Cross inclines to the opinion, that it may depend on incomplete vaccination. In illustration of this, he gives a very instructive table (p. 30) of the progress of cow-pox in 500 persons whom he vaccinated, from which it appeared that 384 of these only were ascertained to pass through the disease satisfactorily. In 16 the vesicles were injured, and the natural progress of the disease stopped or altered. In 12, the appearance of the disease was deemed imperfect, independently of external injury. In 35, reiterated insertions of the ichor failed to produce a vesicle.* In 29, small-pox appeared; and 24 did not return. From this he concludes, that

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* P. 47—55. It is observable, that, although the areola was not perceptibly lessened in these cases by the influence of the small-pox, yet the local effect of the cow-pox had been altered; for in the three patients who survived, the characteristic cicatrix did not remain on the arm.

> "Incomplete cases of the disease, from rubbing, accident, or other causes, will, among the poor at least, *happen in as great a proportion* as modified small-pox in those who are subsequently exposed to the contagion." He adds, that "besides the interruption of the vesicle by rubbing, or the extraction of too much ichor, numerous other causes may interfere with the progress of the vaccine pock, which may be disregarded at the time, and subsequently, in the absence of a register, forgotten, particularly diseases pre-occupying the system at the surface of the skin." "Elsasser (of Wirtemburg) mentions, that in a district where scabies was so endemic, that not above one in fifty was free from it, numerous cases of small-pox, both modified and regular, occurred in the vaccinated, and on inquiry, it was found that a child with scabies had been vaccinated, from whom ichor had been taken, which produced an irregular and imperfect disease. An author, who recently undertook an investigation of the causes of failure of vaccination in Silesia, has related, that, in 1816, above 100 who had been vaccinated had small-pox, in the same district, and some of them died. It appeared that they had all been vaccinated by one surgeon, who was suspended from his office as vaccinator, while an inquiry was instituted by a medical committee, expressly appointed. It was ascertained that the surgeon had been in the habit of taking ichor as late as the tenth day, often from vesicles that had been rubbed or scratched, and had even raised an imperfect scab, to obtain what moisture he could from beneath it, to vaccinate with." p. 196.

We quote this passage at length, because we are strongly impressed with the importance of surgeons taking pains to procure perfect vaccine vesicles, and keeping registers of the cases they vaccinate. That some cases of failure of vaccination to protect against small-pox have been owing to imperfection of the process, no one can doubt; and at all events, minute attention to this point can do no harm. But if it is meant to be inferred, that *all* cases of modified small-pox can be ascribed to imperfect vaccination, or that any marks are yet known, by which we can distinguish a vaccine vesicle, or set of vesicles, that can be safely asserted to be an infallible preservative against small-pox, we assert with confidence, that this inference is in direct opposition to evidence which we already possess. And without reverting to the statements contained in our Review of Dr Thomson's work, on this part of the subject, we see enough in Mr Cross's own book, to bear us out in this assertion. For although he has shewn, that in a given number of vaccinated persons *as many* present appearances of irregularity in the progress of the cow-pox, as are liable to modified small-pox afterwards, yet there is not only no proof, in his work, that the persons who take the modified small-pox are the same as have gone through the cow-pox somewhat irregularly, but there is proof that, in many instances, they are *not the same*. "The regular small-pox," he says, "may occur, and even prove fatal, after regular cow-pox," several instances of which were already given. "The modified small-pox has frequently been met with in those who had two scars from the cow-pox. I have known it where there were three, and others have met with it in those who had four, or even five scars." (p. 195.) Of the 14 cases of modified small-pox, which he details, (p. 77, *et seq.*) there are four, in which it is expressly stated, that the scar left by the previous vaccination was *perfect*, such, as Mr Cross (from his statement at p. 63) seems to think, must have proceeded from the vaccine pock having gone through its different stages quite regularly; in five others, the scar, although small, is mentioned as being indented or foveolous; and what is still more decisive, it appears from a very important table given by Mr Cross at p. 87, that of 57 vaccinated persons, who escaped entirely, notwithstanding "the closest exposure to the most virulent contagion," there were no less than 17, in whom the scars left by the vaccination were as exceptionable as they were in any of the cases where the modified small-pox appeared; having been small in eight, small and shining (instead of foveolous) in three, and *scarcely perceptible* in six. Of the 57, only 19 had more than one scar. Mr Cross himself has been protected by vaccination 20 years ago, which has left only one shining (*i. e.* irregular) scar on one arm. It has frequently happened at Norwich, in short, just as it has in Scotland, that vaccination which, as far as we know, was perfect, has given imperfect security, and that vaccination, which we should conceive to have been imperfect, has given perfect security; and no medical man can therefore be justified in promising that any vaccine vesicle, or number of vaccine vesicles, however regular, will afford certain security against modified small-pox.

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* Mr Cross remarks on these, that we should not decide hastily that a person is incapable of receiving the cow-pox, adding, that he had succeeded in producing one vaccine vesicle in a child, at the *sixth* attempt, after having made four punctures each time, and in every trial but one used ichor transferred immediately from a perfect vesicle; and he mentions one fatal case of small-pox, which might probably have been prevented by similar perseverance on the part of the surgeon, the child having been previously repeatedly vaccinated without effect. p. 90.

That this affords no argument whatever against universal vaccination, must be obvious, we think, to any one who reflects, that vaccination, if not so good an antidote against small-pox as it was once thought, is at least the best that is to be had. And that this is the state of the fact, no one can reasonably deny, who considers for a moment the protection that was actually given in the city of Norwich to 10,000 vaccinated persons. Of these we have seen that only two died of the small-pox, when a virulent epidemic visited the city, and affected almost every one who was liable to the contagion. Had these persons been protected by variolous inoculation, conducted in the best manner, and in the most favourable circumstances, at least 33 of them (1 in 300) would have died of the process intended to protect them; so that, in comparing the advantages of the two methods of protection, we have to weigh 33 deaths *certain*, against two, *contingent on the invasion of an epidemic small-pox*, and then we have to consider, whether there might not be nearly as great a chance of two persons out of 10,000, inoculated for small-pox, taking fatal small-pox on exposure, at a subsequent period of life, to a virulent contagion.

III. This is the chief consideration to be urged with those parents who may hesitate about the mode of protecting their own children against small-pox. The still more important consideration, that no one can be protected against the natural small-pox by variolous inoculation, without the strongest probability of his communicating the disease in its worst form to others, is one that ought to be urged, not to the parents of the children, but to the government of the country; and we were not aware, till we read Mr Cross's book, that so strong a case existed for the interference of the Legislature. It is quite obvious, that as long as inoculation for small-pox is permitted, any measures to prevent the diffusion of the disease must be absolutely nugatory. In Scotland, we believe that the practice is now nearly abandoned; and the general diffusion of the small-pox is to be ascribed merely to neglect of vaccination among the poor, partly owing to habitual indolence, and partly to a mistaken notion of the religious duty of resignation to the Divine will. But in Norwich, it appears that

"Variolous inoculation was practised on more than 400, each of whom thus became a centre of contagion,' (p. 13.;) and in the whole of the neighbouring country, "itinerant inoculators, irregular practitioners, and old women, introduced and extended the disease to all quarters by inoculation; regardless of the admonitions given them, because the law authorized no direct measures against them. The disease was thus continually introduced into parishes previously free from it; and these consequences of the practice were made the subject of a representation to the Grand Jury, some of the magistrates of which body attempted, *without success*, to inflict punishment on the ignorant persons who wantonly committed so great an injury against the public. Many medical men, desirous of doing their duty by discouraging variolous inoculation, have been placed in the most unpleasant situations, and not unfrequently have been compelled to commit an act which they believed to be immoral and injurious, because they could not afford to sacrifice the small emolument arising from it; *some have reluctantly inoculated whole parishes of the poor, at the instigation or order of an overseer,* who probably did not know but the cow-pox was as contagious as the small-pox. It is lamentable indeed, if the legislature cannot interpose to correct evils and abuses, the existence of which has been felt and acknowledged by a very great proportion of the community." p. 219.

Of the danger to the individuals themselves of variolous inoculation, particularly when practised by the ignorant persons above mentioned, Mr Cross's Appendix contains the following proof:—"38 country surgeons who from various motives practised it, lost, among those to whom they had thus given the disease, 21 patients; 14 surgeons reported that 55 deaths had been occasioned in the same way, within their knowledge; and five other surgeons observed, that they had known several who fell a sacrifice to the practice," (p. 272.) The number of the unprotected persons, to whom the contagion was communicated, in consequence of the practice, cannot of course be ascertained with the same precision; but nine of the surgeons, to whom Mr Cross addressed his circular letter, reported to him that

"The disease had been introduced into parishes, in which it did not before exist, by variolous inoculation. One surgeon states, that from the first person who casually fell down with small-pox in his neighbourhood, *forty* were immediately inoculated, spreading the disease in all directions. Another, that in four parishes out of five, where he had attended variolous patients, the contagion was brought by an irregular practitioner, who went about inoculating. A third, that a child went to an adjoining town to get inoculated, and became the centre, whence the contagion spread to the parishes under his care. A fourth states, that before the present year, he had repeatedly been able to prevent the spreading of the disease beyond the family where it originated; but that lately a man of bad character, and not at all acquainted with medical subjects, had for a small gain made it his business to extend the disease far and near. Mr Dix of Snellburgh, found the small-pox in nearly all of the 42 parishes which he superintends, and to many of them it was conveyed by inoculation." p. 269.

Strong as are the objections to all legislative interference with the private concerns of individuals, which cannot be proved to be necessary to prevent injury to the public at large, we think no one who believes the state of the facts to be as we have now represented them,—that a parent who has his child inoculated for the small-pox, gives him a much less chance of escaping with his life, than he would have done by vaccinating him, and at the same time commits a grievous and incalculable injury upon his neighbours, which vaccination wholly avoids,—can hesitate to give his assent to Mr Cross's proposition, that

> " A law should be passed, prohibiting variolous inoculation, by a severe penalty, except under the following circumstances,—where small-pox is already in the family,—where it breaks out in a family, and vaccine ichor cannot be obtained within two or three days,—where the individual is believed to have previously passed through cow-pox or small-pox,—or where vaccination has been already practised without effect." p. 223.

Mr Cross adds another exception, " where the patient is wholly secluded, so as to prevent the possibility of the disease spreading." But we think it may well be doubted, whether it is expedient for the legislature to yield so much to the unfounded prejudices of an individual, as to allow of this exception, particularly as it must be impossible to make any municipal regulations, which shall secure perfect seclusion, in all the situations where persons may wish to submit to this kind of inoculation.

Mr Cross recommends likewise, that persons who may casually contract the small-pox, should be " insulated, either in their own houses, or in buildings or rooms appropriated for their reception, and prevented by penalty from exposing themselves abroad, before the period is past when they are capable of communicating the infection." To this proposal our only objection is, the utter impossibility of executing it, without a much more efficient superintendence of these matters by magistrates and police officers, than we have any reason to expect they will ever exercise. There is another suggestion, however, to which this objection does not apply,

> " That the parents, nurses, or medical attendants of any individual discovered to have this pestilential disease, in any court, street, town, or parish, where it did not before exist, might be required, under a penalty, to give information of the same to a magistrate, who should be provided with a regular form for proclaiming the situation and

nature of the contagion, the dangers attending it, and the means of avoiding it." p. 221.

To this we would add, that we can see no objection to the legislature acting on the suggestion long ago made by Dr Ferriar, * " that *the keepers of lodging-houses should be subjected to licences, which would bring them under the superintendence of the magistrates.*" This, we are satisfied, from our own experience as well as that of others, would conduce very greatly to check the diffusion of this and other epidemic diseases, which are introduced into towns by beggars and vagrants; and very often spread from the low lodging-houses which receive them, as from a centre. † If there were, as there might easily be, in every considerable town, permanent accommodation for the reception of a few patients in febrile diseases; and if the keepers of lodging-houses were liable to the loss of their licences entitling them to keep such houses, if they did not give timely information to medical men, of every person falling sick in their houses, this evil might be effectually controlled, without a greater degree of exertion, on the part of magistrates and practitioners, than may be reasonably expected.

If public intimation were thus given of the small-pox appearing in any town, the first object would of course be, the immediate vaccination of all unprotected persons; " and it would be," says Mr Cross, " very consistent with the most liberal government, to direct magistrates, guardians of the poor, and parish overseers, how they may best proceed, and proclaim the appearance of small-pox in any district, with the laws respecting it, and the preparatory steps to a general vaccination." Of the good that may be done by such measures for promoting this object as are perfectly consonant with the spirit of the constitution of this country, the following fact, from the work before us, affords a striking example.

" An individual falling down with the small-pox in June, in the borough of Thetford, containing about 2100 inhabitants, Mr Bailey, surgeon, gave information of it to the mayor, who immediately called a meeting of the inhabitants, and from the able way in which the measure was advocated, vaccination was immediately determined on. The parish-officers visited every house, made a list of all those liable to the contagion, and threatened to expose any individual who should refuse vaccination, or submit clandestinely to variolous inoculation.

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[*] Proceedings of the Manchester Board of Health, p. 12.

[†] See Reports of the Committee of the House of Commons on the Fever in Ireland, *passim*.

> The list thus made was delivered to the two surgeons, and the bellman was employed to announce the hour on the following morning, at which all those requiring it might be vaccinated at the churches of their respective parishes. These prompt means were successful; about 200 were vaccinated, most of them in the course of two days, and were thus protected perfectly from small-pox, which extended only to eight or ten persons, all of whom survived." p. 267.

It is in the history of more despotic countries, that we are to look for exemplification, on a large scale, of the national advantage derived from general vaccination. From a statement furnished to Mr Cross by Dr Gordon, and which he had obtained from an extensive statistical work just published in Denmark, it appears that "since 1808, the small-pox no longer exists there, and is wholly unknown." In the *city of Copenhagen alone*, 5500 persons died of small-pox between 1788 and 1800, when vaccination was introduced; whereas the number that died of it in the *whole Danish dominions, from* 1802 till 1818, was only *one hundred and fifty-eight*. It is there the law, that all persons shall be vaccinated, and the bishops and magistrates are required to take care that no one be received at confirmation, permitted to marry, admitted into any school or public institution, or bound an apprentice to any trade, without complying with this injunction. "An annual report is published of the results of vaccination, which is judged to have been adequate by comparison with the numbers of births and burials." (p. 241.) A still more striking instance is furnished by the principality of Anspach in Bavaria, in which, as appears by a table given by Mr Cross at p. 248, more than one-fortieth of the population, that is, probably almost all the children that live to the age of six months, are vaccinated annually. In this district, in the year 1809, there were four deaths from small-pox, and since then, up to the end of 1818, not one had died of it. The deaths by small-pox in this district, in the years 1797, 1798, 1799, were above 500 annually, and in 1800 no less than 1609; and what makes this instance particularly satisfactory, the small-pox prevailed epidemically, and to a great extent, during 1814, 1815, 1816, and 1817, in every part of the immediately adjoining State of Wirtemburg. (p. 245.) In Prussia, in which the deaths from small-pox, before vaccination was introduced, were 40,000 annually, they were under 3000 in the year 1817, although the population has been considerably increased by an accession of territory; and in the department of Breslau, containing above 500,000 inhabitants, and in which one twenty-eighth of the whole population were vaccinated in the year 1818, although small-pox was introduced in the course of that year, in nine different places, yet in consequence of the extensive vaccination, and of insulating all who fell down in the disease, only 28 in all took it, and of these 6 died. (p. 244, 245.) It is painful to contrast these undeniable proofs of the power that we possess of resisting the invasion of small-pox, with the example now before us, where " 530 lives were, in less than a year, sacrificed to this disease, in an enlightened city, where humanity abounds, and charity seeks for every measure to prevent and relieve distress."

Mr Cross thinks that some advantage might be derived from having more than one national vaccine establishment, to supply lymph, (as that in London does, on an application being made, in an enclosure addressed to the Secretary of State for the Home Department,) free of expence to all parts of the kingdom. He recommends also a modification of the English poor-laws on this subject, which seems very necessary, to entitle the poor to be vaccinated at the expence of the parish in which they reside, and not of that to which they belong. But what he chiefly, and considering the habits and feelings of all ranks in this country, we believe justly, relies on, is the establishment of charitable associations for the diffusion of cow-pox; and he proposes a plan for the regulation of these, which we think deserving of the attention of our readers, although some simplification of it seems to us to be desirable, and perhaps necessary, before it is reduced to practice.

> " An establishment should be formed in every town and populous district, supported by annual contributions, the amount of which should at least be sufficient to procure a house, where all applicants may be vaccinated on certain days of the week, and to answer the expences of a general census, in order to ascertain the numbers of those who require to be vaccinated. This census ought to be taken in the spring of every year, and each of the medical men who choose to be connected with this institution, and to offer their services, should engage to visit and to vaccinate all those desiring it at their own houses."

It should be a part of the object of this society also, he thinks, to get the earliest information of the introduction of the small-pox, and to provide a building for insulating those who fall down in the disease. The heads of families, he adds, should refuse to take into their houses servants liable to small-pox :

> " And it should be a standing regulation of all charity schools, and extensive institutions for the reception of children, that none be admitted but those that have had small-pox or cow pox. This law existed and was acted on in a large establishment of the kind in Norwich, but the long absence of the small-pox brought the regulation into ne-

glect, and the consequence was that many died of the disease, and a portion of the benefits to be derived from the institution was lost to the public." p. 237.

IV. Mr Cross evidently inclines to the old doctrine, that chicken-pox and modified small-pox are separate diseases, although he expresses it, as every one ought to do in the present state of the inquiry, as a probable rather than an established opinion. The name most commonly given, in his neighbourhood, to the vesicular disease, which he thinks may be distinguished from any form of small-pox, is crystals or water-pox; and the following are the facts, which he has observed in regard to this eruption, which seem to bear on the question.

He gives, at p. 71, as a characteristic specimen of this disease, the case of a young lady, whose symptoms any one that takes the trouble to compare the descriptions, will find to be just those which Mr Bryce and Dr Abercrombie regard as characterizing the vesicular disease, to which they conceive that the name of chicken-pox ought to be restricted. In our number for April, we observed, that "if these gentlemen are right in their opinion regarding this disease, eruptions answering to this description will be farther distinguished by the following marks," in enumerating which we shall annex quotations from Mr Cross's *book*, to show how completely his experience, so far as it goes, coincides with theirs.

> "1st, They will always give rise to eruptions similar to themselves." (Review.) "I have never met with these eruptions, rising into large pellucid vesicles, in those families where others had the small-pox. The disease is very contagious, but it seems to maintain its own character in being communicated from one individual to another." Cross, p. 74.

In a private communication, with which Mr Cross has favoured us on this subject, he says,

> "I never found it in the same house with the small-pox, nor did I ever know it occur in a family where small-pox shortly afterwards made its appearance in those of the family who were not protected against it. My experience on these points corresponds precisely with that of several other respectable and observing medical men in this town."

> "2dly, They will affect indiscriminately those who have had cow-pox, those who have had small-pox, and those who have had neither." (Review.) Mr Cross's general character of these eruptions is, that they "seem to have occurred indiscriminately in those who had passed through small-pox or cow-pox, and in those who had not had either of these disorders." p. 70.

The greater part of Mr Cross's patients, in this disease, appear to have been vaccinated persons, but he had seen in it two unprotected children, whom he afterwards vaccinated; and he "watched every step of the disorder in a boy who had, within six weeks, recovered from the small-pox, and whose body was still marked with the plum-pudding spots, from a numerous burden of the eruption." p. 78.

> "3dly, They will furnish no protection against the future contagion of small-pox." (Review.) "I have not witnessed the progress of this eruption in any child which subsequently had the small-pox, but I have reason to believe that such an event has occurred." Cross, p. 74.

In the private communication above mentioned, he says,

> "I met with regular and severe small-pox in two children whom I believed (from the history given me by their parents, and the appearance of the scars produced by it) to have had the vesicular eruption a few weeks before." Besides this, three children, whom he attended in modified small-pox, had, at different periods since vaccination, "had an eruptive disease which the physician attending called water-pox." p. 77.

The following case, from Dr Hodenpyl's account of the epidemic at Rotterdam, is still stronger: "Two vaccinated children, and one unvaccinated, in the same family, all had the water-pox. A month or two afterwards, one of the two formerly vaccinated had an eruptive disease," which was judged to be modified small-pox. p. 179.

> "4thly, They will hardly ever be confluent, or dangerous to life." (Review.) "Complaints of this kind have been unattended with danger." (Cross, p. 70.)

Another fact, stated by Mr Bryce and Dr Abercrombie, to support the doctrine of a separate disease, was the regular progress of vaccination after the vesicular disease was completed. Six cases of this kind were mentioned in our Review of Dr Thomson's book, and we have since seen three more. Mr Cross "vaccinated two children with perfect success shortly after he had seen them with this disease, which, in both of them, had left several light-coloured scars;" (p. 74.) and Dr Hodenpyl had the same success in one case. p. 179.

In his private letter to us, Mr Cross says, "I have seen neither small-pox nor modified small-pox in Norwich since this year commenced, but I have seen two cases of the vesicular disease," the origin of which, however, he could not trace. We have seen a very recent letter from Dr Howitz of Copenhagen, in which he states, that although small-pox is at present unknown in Denmark, they have occasional visitations of what they call chicken-pox, always without danger; and we can hardly suppose that vaccination has been so very general, even in that country, as to leave none capable of going through the small-pox regularly, if the contagion really exist among them. We have ourselves seen the vesicular disease in one family in the course of the summer, where it presented exactly the same phenomena as in the families mentioned on the authority of Mr Bryce and Dr Abercrombie, in our former number, (p. 256.) The first case of it that was seen, in a vaccinated child, was pronounced to be chicken-pox, and not modified small-pox; and afterwards it was found that the eruption had already appeared on one *unprotected* child in the family, in whom it presented the very same characters, and was formed into crusts within four days. We have also seen this vesicular disease in five children, all of them unprotected, living in the same house; and had the satisfaction of observing, that in all of them it followed exactly the same course, and there was no vesicle in all the five, which was not formed into a scab within four days from its appearance.

We mentioned in our former review, that we had seen the contagion of true small-pox produce, in the unvaccinated, particularly in very young children, an eruption which was merely papular and vesicular, forming into crusts within four or five days; but we added, that this was rare, and that the appearance of these vesicles, when seen sufficiently early, was, so far as we had observed, *clearly distinct* from that of the vesicular eruptions to which Mr Bryce restricts the name of chicken-pox. We cannot resist the pleasure of quoting from Mr Cross's private letter his testimony in favour of the correctness of that statement:

> "I acknowledge that one of the defects in my short treatise is, my not having described the mildest form which small-pox assumes in the unprotected; but if I had described it, I should not have made it the same as, nor indeed very similar to, the mild vesicular disease commonly called crystals or water-pox."

Mr Cross proposes to apply the generic term Varicella both to the modified small-pox, (or the mildest small-pox just mentioned in the unprotected,) and also to the vesicular eruption described by Mr Bryce; and the following sentences, which are the chief parts of the definitions he gives of these two species of varicella, will shew the manner in which he distinguishes the two. The only particular that is new is the circumstance of the vesicle of the latter disease being only one cavity, that of the former several; and this we believe to be both just and important.

" *Varicella Cellulosa.*—The fluid of the eruption contained mostly in separate cells; the pocks often depressed in the centre, but sometimes presenting only conoidal and firm vesicles, placed upon a thickened basis of the cutis; incrustation taking place, without secondary fever, at various periods, from the third to the seventh day; scabs mostly flat and circular, and, on falling off, leaving tubercular elevations, or convex surfaces of the cutis. Produced by the variolous contagion.

" *Varicella Bullosa.*—The fluid *every where* * contained in vesicles composed of one cavity; the covering of the contained fluid delicate and easily broken; drying into small irregular crusts from the third to the fifth day, and, on falling off, leaving in every part a plane surface of the cuticle;† rarely leaving pits, except from scratching. It is doubtful if this eruption proceed from the variolous contagion; certain that it does not give rise to small-pox; and that it maintains the same character in all classes, whether occurring before or after cow-pox or small pox." pp. 207—209.

We are sorry to close our account of a work, in which we have found so much to praise, with an expression of disapprobation; but to this arrangement we cannot consent. We perfectly agree with Mr Cross that the name varicella has been very often given to both kinds of eruption; but we are quite clear, that the former disease (by whatever specific name it may be designated) ought to have the generic title of Variola; and that the separate generic name should be given to the latter, unless it shall be proved hereafter to proceed from the contagion of the small pox. If there is any principle in nosology which is fixed and invariable, we apprehend it to be this,—that two cases of disease, which spring from the same contagion, and either of which is capable of engendering the other, ought to be referred to the same genus; and that cases, which are believed to spring from different specific contagions, and neither of which is thought capable of engendering the other, should be referred to different genera.

Highly as we approve of the zeal and ability which Mr Cross has shewn in this work, we cannot close it without remarking, that there are evident indications of haste in the composition of it. We were somewhat offended by various colloquial and inelegant phrases, (particularly by the ungrammatical expression, a patient *coming out with* an eruption;) and, what is more material, the arrangement of the work appears to us by no means fortunate, and its length unnecessarily great. We mention these defects with the less hesitation, as we are persuaded that a little reflection would enable the author to correct them in a future edition.

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* This is important, because in *regular* small-pox, as before observed, and in some cases of modified small-pox also, a certain number of such vesicles appear, mixed with the general and characteristic eruption.

† This we think too strongly expressed, and, at p. 201 also, Mr Cross speaks too confidently of being able to distinguish the eruptions in their later stages. (See Review of Dr Thomson, p. 253.) In cases of difficulty, we are satisfied that the eruption must be seen early, in order that it may be known with certainty.

II.

A Treatise on Inflammation of the Mucous Membrane of the Lungs. To which is prefixed an Experimental Inquiry respecting the Contractile Power of the Blood-Vessels and the Nature of Inflammation. By CHARLES HASTINGS, M. D. Physician to the Worcester Infirmary; late President of the Royal Medical Society, Edinburgh, &c. pp. 420. 8vo. London, 1820.

WE have been much pleased with this volume, though, in a greater degree, by the preliminary matter, than by the body of the work. The latter treats of *bronchitis*, and is the result of the author's experience since he entered upon the practice of his profession; while the former contains physiological and pathological inquiries, to which he devoted much of his attention, when his medical studies were sufficiently advanced. Success in the investigation of physiological questions depends upon the knowledge, ingenuity, and zeal of the inquirer. He can create and vary experience at his pleasure, until he comes to a satisfactory conclusion. But practical observation depends upon the opportunities presented to us, and a long series of years of attention is necessary for adding materially to the knowledge of subjects which receive little elucidation from ingenious speculation.

The introduction to the present volume contains an inquiry into the contractility of the blood-vessels, which already, as his inaugural dissertation, when he acquired the degree of M. D. at this University in 1818, deservedly gained him great reputation. It contains both a very lucid and instructive view of the observations and opinions of his predecessors, and the results, and partly the detail of an extensive series of experiments conducted by the author. These relate successively to the proofs of contractility in the large arteries, in the capillary vessels, and in the veins. On the first branch of the subject he comes to the following conclusion:

> "The inference from all these facts seems to be, that there is sufficient evidence of the irritable power of the larger arteries. It has been shown that these vessels are obedient to chemical and mechanical stimuli, and that the effects arising from the application of these stimuli resemble those which they produce when applied to parts decidedly muscular; and, therefore, it follows, that the larger arteries exhibit those vital phenomena which characterize irritability in muscular parts." p. 33.

This conclusion being at variance with the observations of distinguished physiologists, both in our own and other countries, such as both Drs Parry, Bichât, and Magendie, he examines their arguments at some length. He has given in a table the results of 25 experiments, in which various stimuli were employed, attrition, air, punctures, ammonia, and nitric acid, and from all of them, he observed contraction, either slight, or extensive, or irregularity of surface, or great increase of motion in the part of the vessel irritated. As Bichât and Magendie have both denied that alkalis excite arteries, we quote the following conclusive experiment:

> "The abdomen of a full grown rabbit was opened, and the aorta exposed. The pulse was perceptible, but not very distinctly so; neither could those present say, positively, that there was lateral dilatation. Liquor ammoniæ was applied to the artery: its motion was perceptibly increased by it; and a second application of the stimulus being made, alternate dilatation and contraction were rendered very evident. A thread was then passed tightly around the aorta, and the ammonia again applied. The vessel, during its dilatation, rose much more above the thread after the stimulus was applied than it had done before. Each application of the ammonia produced a similar effect." p. 26.

The experiments on the contractility of the capillary vessels are 43 in number.

> "It appears that the application of a stimulus often quickens the circulation in the small vessels, whilst the motion of the blood in a neighbouring part, to which no stimulus is applied, remains unaffected.
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> "That when a small vein or artery is touched by a stimulating substance, a contraction is often produced, so as to be visible by the help of the microscope. This contraction sometimes proceeds to such an extent as to prevent the free passage of the blood; and in

this case it does not accumulate, but takes a retrograde course. During such contraction, if not sufficient to prevent the transit of blood, the impulse of the ventricle is generally perceptible in all the vessels in communication with the contracted one, and the blood in the capillaries connected with the contracted vessels for the most part moves slower.

"That a stimulus, in the first instance, often produces a quickened motion of the blood and contraction of the vessels; but after it has been applied some time, dilatation of the vessels and a slower movement of the blood follow: but after the vessels are dilated by the action of one stimulus, some other stimulus will often produce contraction.

"That the action of water, heated considerably above the temperature of the animal to which it is applied, often occasions contraction of the vessels and acceleration of the blood's motion; but after a certain time, dilatation and retarded circulation ensue. Ice generally produces a contraction of these dilated vessels, and restores the velocity of the circulation.

"That ice kept in contact with the web of a frog's foot produces, in the first instance, a contraction of the capillaries, and increases the motion of the blood; but after a certain period, if the application be continued, the vessels become dilated, and the blood moves slowly. A temperature of eighty degrees of Fahrenheit, however, or the application of oleum terebinthinæ, again excites the capillaries to contract, and the circulation is restored to its natural state.

"When the foregoing facts, and the necessary conclusions to which they lead, are maturely considered, it will be admitted that the capillaries possess a very considerable degree of irritability." p. 59, 60.

The experiments upon the irritability of the veins are fewer in number, but the author thinks them sufficient to show,

"that the veins are not insensible to stimuli, though certainly it appears that they are not so readily affected by mechanical stimuli as the arteries are; from which it may be fairly concluded, that they possess a lower degree of contractility." p. 63.

Upon the whole, we are of opinion, that Dr Hastings has confirmed and established incontrovertibly, that a considerable share of irritability is possessed by the blood-vessels in every part of the system, but most remarkably by the capillaries.

The treatise on inflammation commences with a preliminary chapter on the general nature of inflammation, to which we willingly give an equal measure of praise as to the introduction. After having mentioned the opinions of Boerhaave, Cullen, and John Hunter, on inflammation, he states, that the doctrine most generally taught at present is, that inflammation depends on an increased action of the vessels. An opposite opinion was, however, maintained so long ago as 1765, by Vacca Berlinghieri of Pisa;[*] and, probably without any knowledge of his ingenious, but whimsical treatise, was stated and ably defended by general arguments, in the Royal Medical Society of this place, by Dr Lubbock and Mr Allen. Afterwards, Dr Wilson Philip and Dr Thomson resorted to the aid of the microscope to obtain assistance in determining the question in dispute, but their observations did not exactly agree.

> "Dr Philip maintains that inflammation consists in debility of these vessels, followed by an increased action of the larger arteries, and is terminated as soon as the capillary vessels are so far excited, and the larger arteries so far weakened, by the preternatural action produced in them, that the power of the capillaries is again in due proportion to the vis à tergo." p. 76.

While Dr Thomson says,

> "That inflammation is sometimes attended by an increased, and at others by a diminished, velocity in the circulation through the capillary vessels of the inflamed part; and, consequently, that neither of those two states ought to be included in the definition which we give of inflammation." p. 78.

To attempt to reconcile these jarring sentiments, Dr Hastings entered upon an experimental inquiry. He operated chiefly on the web of a frog's foot, and observed carefully, by the microscope, the effects of mechanical violence, of heat, of cold, of diluted water of ammonia, and of an incised wound, upon the healthy web; and of ice and oil of turpentine upon it when inflamed. The results have been so well described by the author that we cannot venture to abridge his description.

> "It appears that certain stimuli applied to living parts produce an increased velocity of the blood's motion, and a contraction of the blood-vessels. During this state of excitement, the part affected is so far from giving any thing like the appearances of inflammation, that the size of the vessels is diminished, and the part is paler.
>
> "But if the stimulus be long continued, or increased in power, the small vessels, which in the natural state admit only of one series of globules, become so dilated as to allow an accumulation of a much less fluid and redder blood in them, which loses its globular appearance, and moves much more slowly than that which previously passed through the vessels. The part now appears inflamed. If the stimulus be removed, the vessels do not soon regain their original state;

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[*] See Ed. Med. Journal, Vol. II. p. 79.

time is necessary to allow them to recover their contractile power, so as to prevent the impetus with which the blood is propelled by the heart and larger arteries from keeping up the dilated state of the capillaries. Here, then, we are obliged to admit, with Boerhaave, that there is an *error loci;* for a denser and redder blood passes into small vessels, which before carried much more fluid contents: but the *error loci* does not cause the inflammation, but results from the previously weakened state of the capillaries. In this manner the blood may occasionally be extravasated in inflammation without any actual rupture of a vessel, for the exhalents may be so weakened and dilated as to allow globules to pass through them.

"If the stimulus which produces the inflammation be of a very acrid nature, debility of the vessels is frequently induced without any previous excitement. The blood in all the smaller vessels becomes very red, circulates very slowly, and in some vessels stagnates.

"The application of a stimulus different from that which produced inflammation will sometimes bring on resolution. When this occurs, the dilated vessels contract; they no longer contain a red, dense, homogeneous fluid, but again receive blood consisting of small nearly colourless globules, which float in a colourless fluid; and the motion of these globules at length becomes as quick as before the inflammation took place. If, however, the inflammation proceed, the blood becomes nearly stagnant; it continues very red, and the vessels are much dilated.

"When this high degree of inflammation is not relieved, sphacelus ensues. The part then feels softer to the finger, and gives way with less force. The vessels are much dilated, the blood does not move, it loses its red colour, and becomes of a yellowish brown hue. The separation of the dead from the living part takes place soon after this change in the colour of the blood.

"Whilst the ulceration produced by this separation of the dead from the living part of the web is healing, the capillary vessels, distributed on the ulcerated surface and in the contiguous parts, are much distended with arterial red blood, which is moved very slowly. When the ulceration is healed the vessels become contracted, and circulate the fluids with the same degree of velocity as before the inflammation was excited.

"With respect to the seat of inflammation, it may be observed, that the capillaries are first affected; but even the small arteries of the web are also occasionally distended." pp. 90—93.

"The changes that take place in the appearances of the blood in an inflamed part are very important, but have not been particularly described by those who have treated of the state of the blood-vessels in inflammation.

"In the author's experiments, the weakened action of the smaller vessels was always accompanied with an alteration in the appearance of the blood. In the natural state of this fluid, globules can be distinctly seen; but after inflammation has commenced the globular

structure disappears, the blood becomes redder, and the most r
capillaries are distended with it." pp. 94, 95.

We must refer to the work itself for the application of
observations to the explanation of the phenomena of infla
tion ; and we cannot conclude this part of our analysis wi
expressing our unqualified approbation of the liberal and c
manner in which Dr Hastings speaks of those writers
whose opinions or observations he animadverts, and of ho
up his style as a model of imitation to all who may enga
controversial writing.

The body of the work treats of the inflammation of th
cous membrane of the lungs, or bronchitis,—a term intro
by Dr Badham. One chapter is devoted to a short analy
the opinions of preceding writers respecting bronchial infla
tion, but he confines his attention too much to the recent B
authors, although the subject has by no means been negl
by those on the Continent; and, in particular, we are r
surprised that no mention is made of Broussais or Laenne
though their pathological observations on pulmonary catarr
other diseases of the lungs are highly interesting.

Dr Hastings divides bronchitis, in the first place, into
and chronic, and of the acute he describes seven, and
chronic, six varieties; in all thirteen varieties of inflamm
of the mucous membrane of the lungs. Of the propriety
multiplication of diseases we cannot approve. In our opi
it tends to retard, not to promote the knowledge of di
We admit that the division of diseases into species an
rieties is purely arbitrary, but some principle must be
in view, otherwise confusion, not elucidation, will be th
vitable consequence. We shall, however, state the var
adopted by Dr Hastings, that our readers may judge o
validity of our criticism; and here we may express our r
that he has not always given the synonyms when they
been known by other names. Of acute bronchitis we
1. Mild bronchitis or common catarrh. 2. Bronchitis o
aged and feeble, the peripneumonia notha of authors. 3.
chitis in the strong and plethoric. 4. Bronchitis in in
5. Bronchitis after erysipelas, rubeola, and other cuta
diseases. 6. Bronchitis complicated with diseases of the
minal viscera. 7. Bronchitis rendered obscure by co-exi
diseases, and unattended by its usual symptoms. And of ch
bronchitis we have, 1. Of the aged. 2. Resembling tube
consumption. 3. After catarrh. 4. After cutaneous dis
5. From irritating substances acting on the mucous mem

6. Complicated with diseases of the abdominal viscera. After this enumeration, very little comment is necessary, as it is obvious that, with equally good reason, the varieties of this or any other disease might be increased from 13 to 130. It appears to us that he has not kept in view any principle to guide him in establishing his varieties. In fact, the genus bronchitis may be subdivided on many principles. Cullen would probably have distinguished it into idiopathic and symptomatic. But there is greater difficulty in applying this distinction in practice than is generally believed. Thus idiopathic bronchitis arises from cold, acrids inhaled, &c. When it occurs in measles, scarlatina, and continued fever, it may be considered symptomatic; but when it accompanies laryngitis, to which division shall we refer it? Or when it is vicarious, as with erysipelas, or is a sequela, as after measles, hooping-cough, &c.? In another point of view, bronchitis may be subdivided into simple and complicated, and, in the latter case, it may co-exist either with a similar affection of parts in continuity or contact, as in tracheitis and peripneumony, or with diseases of distant parts, as of the abdominal viscera. In its nature, it may differ in the rapidity of its progress, constituting the acute and chronic forms of the disease; in its severity, being mild or malignant; in being with or without predominant fever; in its extent, being general or partial. It may differ according to the exciting cause, which may be contagion in measles, scarlatina, and fever; an epidemic state of the atmosphere; exposure to cold or sudden alteration of temperature; the translation of other diseases; the direct inhalation or application of acrids. It will also differ very much according to the age or constitution of the person affected; in the infant, the adult, and the aged; the irritable, the plethoric, or the exhausted; in the healthy or diseased. Lastly, Its terminations may be various, in health, death, or some other disease. With different views, any one of these principles of subdivision may be selected; but if we attempt to combine them all, we shall have a nosology of bronchitis, and may have one of any organ of the body, as multifarious and extensive, as those which have lately become frequent in regard to the eye.

We shall now proceed with the analysis of Dr Hastings's work. His leading division is into acute and chronic. Of each, he describes in succession, the symptoms of the varieties, the appearances on dissection, the nature, ratio symptomatum, diagnosis, prognosis, and treatment, and to which he subjoins a selection of cases. Upon all these subjects our author writes judiciously, although, perhaps, even in a work professedly upon inflammation of the mucous membrane, he has kept too much out of sight that of the other tissues of the lungs.

The last chapter of Dr Hastings's publication is dedicated to dropsy, as dependent on inflammation of the mucous membrane lining the bronchia. We readily concede to our author the merit of having pointed out more particularly the connection between these diseases, although it has not been so much overlooked as Dr Hastings seems to think; but while we are convinced that dropsy sometimes depends upon previous inflammation of the mucous membrane of the bronchia, we must bear in mind that it may also arise from affections of the other textures of the lungs. The treatment of the dropsy here treated of, as might indeed be expected, is generally antiphlogistic, but for the circumstances to be attended to, we must refer to the work itself.

III.

A Complete Treatise on the Nature, Symptoms, and Cure of Lues Venerea, Historical, Theoretical, Practical, and Original. By Jesse Foote, Esq. Surgeon. A new edition, amended and corrected. 8vo, London, 1820. pp. 420.

This is the work of an old and assiduous labourer in that branch of practice, which he undertakes to discuss. Many years have now elapsed since Mr Foote first set himself to oppugn what he considered the dangerous heresies of John Hunter; and, during these years, no professional subject whatever has undergone a more patient and candid investigation than the one of which he treats. This investigation has tended to amplify, to illustrate, and to confirm many of Mr Hunter's opinions. It does not, however, appear from the present publication, that our author's sentiments have undergone any correspondent change; he still goes on with a swaggering independence to speak for himself alone. "I am Sir Oracle; and when I ope' my mouth, let no dog bark." "Above all," he says in his Preface,

> "I beg it to be understood, that this performance is theoretically and practically my own, that it is the result of my own observations,

and of my own practice. Theory is knowing what we do, practice is doing what is known. When theory and practice go not hand in hand, 'tis easier to teach twenty what is fit to be done, than *to be one of that twenty* to follow one's own teaching.' I most cheerfully submit this volume, not with that apology of toil and trouble which some authors pretend, who, like porters, on delivering a very light weight, take out their pocket-handkerchiefs to wipe the sweat from off their foreheads, in order to play upon generosity. I am not indebted to the work of others, nor do I enjoy the good of mercury, then cavil the conditions. I have not come down at stated times to rummage the bookseller's compter for materials to work upon. When I think of such authors, it raises a smile, though mixed with pity,—it reminds me of an animal called by naturalists the soldier. This little creature, says the historian, is passionately fond of a shell; but, not being supplied with one by nature, has recourse to the deserted shell of some other. I have seen these harmless reptiles, continues he, come down once a year from the mountains, rank and file, cover the whole shore, and ply busily about, each in quest of a shell to please it. Nothing can be more amusing than their industry upon this occasion. One shell is too big, another too little; they enter, and keep possession sometimes for a good while, until one is, at last, found entirely to please. When all are thus properly equipped, they march up again to the mountains, and live in their new acquisition till under a new necessity of changing." pp. vii. viii.

Mr Foot commences his work by some historical testimonies on the origin of the venereal disease, and upon this point evinces considerable information and research. In his fourth chapter, which treats of the nature and action of lues venerea, he discusses the question of the identity of the gonorrhœal and syphilitic poisons. Mr Foot is decidedly of opinion that they are one and the same virus acting upon different textures, but does not support his doctrine by any argument which has not been adduced (shall we say refuted?) over and again.

The two succeeding chapters are occupied with the consideration of gonorrhœa and its concomitant symptoms. Here our author seems obviously partial to the use of injections, and at page 113 recommends a solution of the carbonate of copper, for the preparation of which he gives directions, as one of the most successful remedies of this class.

Mr Foot then goes on to treat of chancre, in the appearances of which he admits of considerable latitude, and observes, as we think very justly,

"That one description will not answer for the appearance of chancre on every part, it will only answer for the appearance of every chancre on parts of the same nature; and still there will be a reference to the previous condition of the natural health of the same parts." p. 148.

The following chapters treat of bubo, and of the action of lues venerea on the constitution. In the last section of Chapter X. which is entitled "Other Venereal Constitutional Symptoms, at a more advanced Stage of Lues Venerea," our author quotes a passage from "Vigo's Practica Copiosa in arte Chirurgica," written in 1513, and some passages from Fracastorius, with a view to prove that the disease, particularly in its more advanced stages, exhibited the same appearances in the days of those authors as it does now. Upon this point we have, of late, become extremely sceptical, and, within these few weeks, a fact has been mentioned to us by an intelligent medical gentleman from India, which decidedly proves, that in that part of the world at least, the disease appears to be undergoing important and rapid changes. In one of the battalions of the Madras Artillery, to which the gentleman we allude to is surgeon, he had not, for nearly two years, a single case of syphilis in his regimental hospital, nor did any disease of the genitals whatever appear in his returns, with the exception of a few cases of gonorrhœa! Our friend had also access to know that in the other battalion of the Madras Artillery, very few cases occurred in the same period. What a contrast this to the scenes, which, less than seven years ago, we ourselves were in the daily habit of witnessing in the hospital of one of his Majesty's regiments serving on the Madras establishment, where it was usual to see twenty, thirty, forty, and, upon some occasions, not less than sixty patients affected with different venereal symptoms. But to return to Mr Foot; in his history of the remedies for the cure of lues venerea, he gives an account of the composition of the pills of Barbarossa, which were one of the first forms in which mercury was employed for the cure of syphilis. These pills suffered a fate, with which mercury and all its preparations, collectively and individually, seem to be threatened in the present day; and we quote the following passage as a warning to some ingenious speculators of our own time, who seem inclined to do with mercury, as some of the politicians of the day would have his Majesty do with his ministers; to banish it from their presence and councils for ever.

> "To the red precipitate succeeded pills with crude mercury, the receipt of which was brought from Turkey, and they were called originally pills of Barbarossa. These, according to the testimony of Peter de Bayro, Physician to Charles the Second, Duke of Savoy, in 1540, consisted of twenty-five drachms of quicksilver, ten drachms of rhubarb, three drachms of scammony, one drachm of musk, one drachm of amber, and two drachms of wheaten meal; the whole to be made into a mass with lemon juice. A pill of this, of the size of a pea, to

be taken every night an hour before supper. Bayro relates, and I dare say with truth, that these pills were wonderfully successful. But they were introduced at a time when the reputation of mercury was fading, owing to that general and improvident abuse of it, by its falling into the hands of ignorant practitioners; for Bayro remarks, that, (such was then the impression on men's minds about mercury,) if any who had used this remedy were seized with a disease of whatever kind within ten years after, it was sure to be blamed for it.

"Such was the misfortune, and such the fate of a great attempt in the improvement of the use of mercury, from its being brought forward when prejudice was deaf to its value, and would not permit its merits to be weighed by the standard of truth. The abundance of forms in which mercury is now given, is the consequence of pharmacy being more enriched by chymical inventions posterior to this time. Man may generally be defined (and history concurs in the establishment of the fact) to be fickle, improvident, and abusive. And the definition will more strongly apply in this instance, than in any other which I am able to recollect. When Lues Venerea first appeared, such dejection and despondency prevailed amongst men, as to depress their minds to the lowest pitch of despair. But no sooner was the effect of mercury proclaimed, than its advantages were extolled as the only specific that could be depended upon.

"The abuses of this specific, the flagrant evils arising out of the improvident use of it, the frequent instances of those who had fallen victims to its poisonous action, excited a general clamour against it, and many preferred enduring the disease to the mercurial remedy." pp. 268-270.

We apprehend it is by this time hardly necessary to inform our readers, that Mr Foot is a determined mercurialist, and urges its exhibition in every form of venereal disease (gonorrhœa excepted) to an extent to which we cannot always go along with him; at the same time we fully agree with our author in considering it the business of the practitioner to regulate the supply of mercury in every individual case, and holding him answerable that it shall not be pushed to an injurious extent; we apprehend that many, very many cures have of late been protracted by the indiscriminate condemnation of this medicine in all cases, instead of holding the surgeon responsible for the extensive injury done by it in a few peculiar constitutions.

"Mercury, therefore, must not be hurried into the constitution; the action of it will be various upon various constitutions; the business of the practitioner is to ascertain, from consequences, the particular power of mercury upon every particular constitution, and to repeat and regulate the supply of mercury accordingly." p. 295.

In speaking of the mode of exhibiting mercury, our author gives a decided preference to its introduction by friction.

> "The most preferable mode for the application of mercury I consider always to be by inunction: I consider it the most innocent and the most certain action. The violence which it commits upon the constitution in general, is the only violence which is experienced by it from this mode of introduction. No violence is done to any local part. But when mercury is given internally, there is a greater probability of a double violence being incurred through its action: a local violence, besides the constitutional violence. It will nauseate upon the stomach, it will stimulate the bowels, it will injure both, it will produce griping, and the dose will be obliged to be limited." pp. 303, 304.

On the internal exhibition of mercury, a communication was lately made to us by a scientific gentleman of this city, which we consider deserving of farther attention. This gentleman was some years ago recommended to undergo a course of mercury for the removal of bilious complaints, and being naturally fond of experiment, he was induced to try the effect of taking the medicine on a full stomach, with a view of obviating its irritating effects upon the bowels. In this way he took for several days six, and afterwards to the extent of nine of the common blue pills every day for a week, three after breakfast, three after dinner. and three after tea, without any unpleasant effect on his bowels, while, at the same time, the mouth became sore, and the usual constitutional effects of the medicine followed. There are many cases in which we conceive this plan might be adopted with advantage, and we mention it here for the purpose of soliciting communications on the subject, from any of our readers who may be disposed to try it.

At page 339 of Mr Foot's work, we have a specimen of that eccentricity of language which constitutes a remarkable feature in the present publication. In detailing the case of a young tradesman affected with phymosis, he observes, "the swollen state of the penis, from high and constant inflammation, had contracted the circumference of the urethra;" and then goes on to remark in a foot note:

> "According to Mr Travers, such an explanation as mine must be exploded; for Monsieur Bishat has explained the same thing, which he thinks is done after a better manner, and therefore brought it from France (mark it)—" and that swelling of the parietes necessarily diminishes the calibre of a canal.' Walls and Calibre, in anatomy, sound strongly ungrateful to the English ear. Round the city of Babylon, or in Woolwich-park, they would be much more a-kin. But in different and distinct ages, this corruption of words has not passed unnoticed. My objection to this Babylonish jargon is the humblest of the present and of the precedents of former ages.

"In the 4th scene of the fifth act of Shakspeare's Hamlet, Ostric, the Dandy of his day, bringing a challenge from Laertes to Hamlet, calls 'Hangers' (which were only side arms) 'Carriages.' Hamlet tells him, that the phrase would be more german to the matter, 'if we would carry cannon by our sides.'

"Sallust also has recorded from the speech of Cato in Cataline's Conspiracy, that the quantities of Dandies of that day had perverted and even lost the true use of words.

"'Nos vera Rerum Vocabula Amisimus.

"Cato apud Sallust.

"'Calebyre and Walls!' 'Walls round Ulcers, and Walls round Aneurisms.'—Such are the ebullitions of *genius*, the boilings over from the furnace of Nature's work-shop, the Pineal Gland, or the waste of the dust of a diamond whilst it is polishing by an artist." p. 339.

We have thus endeavoured to convey to our readers some idea of this singular work, the production of a man sufficiently conversant with the practical part of his subject; it contains many just observations, and some good rules of practice enveloped in language not always the most intelligible. We do not consider Mr Foot a man likely to profit by any hint of ours; at the same time it is our duty to point out the sins which most easily beset him;—a want of perspicuous arrangement; and the adoption of a barbarous phraseology, which in many instances bears a very distant resemblance to our mother tongue.

PART III.

MEDICAL INTELLIGENCE.

To the Editor of the Edinburgh Medical and Surgical Journal.

In perusing your last number, Vol. XVI. I was particularly struck with the first paper, on the Profession of Physic in England, which contains a very important, and I dare say, correct history of the London College of Physicians. The matter is well arranged, and marked with much good sense. The concluding part, referring to the late and *only* act of the Apothecaries' Company, for the better regulation and practice of apothecaries, &c. is not understood by the author. With the exception perhaps of London and Bath, there are very few apothecaries, strictly so called, and they are very much reduced in numbers in the former city, from the inroads made by the chemists in compounding medicines; and from the distress of the times, young men are obliged to pursue the three branches of the profession to gain a livelihood. It follows, therefore, that the bulk of students must be young men, and that is the fact, who have served their apprenticeships to a surgeon and apothecary, either in London or the country. So far from this act creating a monopoly, the apothecaries will derive no benefit from it, except an improved education, classically as well as medically, but I am not aware their pecuniary interests will be improved by it. Hitherto I am convinced in this respect they have been losers. Previous to the passing of this act, the legitimate and well educated apothecary stood upon much higher ground generally than either the surgeon or surgeon apothecary. Perhaps it will surprise your author when I say, that for the last fifty years, very few of our eminent surgeons were acquainted with pharmacy, materia medica, or general disease, that was not immediately connected with their own department. The writer of this letter made an observation to Mr Astley Cooper two or three years ago on this subject, that he did not seem aware of, but which really is of vital importance. The high character and superior talents of Mr Cooper secure to him a great proportion of students, whom he stimulates, both by example and precept, to be very industrious and attentive to their anatomical and surgical studies, and they are generally found to profit by his advice, and are sent home excellent surgeons. During their attendance at the hospital, cases of fever, erysipelas, and diseases in general, have been altogether overlooked, and when they sit down to practice, where one case of surgery occurs, there are twenty medical, to which he is comparatively a stranger as to treatment, although his anatomical knowledge, which is of the first importance I admit, may teach him the disease. This has been verified by the court of examiners, in the first two or three years of the bill. Students, in other respects well educated, were ignorant of the first elements; they were not able either to read or translate a physician's prescription grammatically, and sometimes not at all; they were not acquainted with drugs or their doses, nor with their pharmacopœia, and were equal strangers to all the important narcotic plants now so much in use in medicine. The operation of the act has produced an astonishing alteration in this respect; the court, however, have still to lament the deficiency of candidates in the Latin language, but not in the same proportion. The public are and will be materially and importantly benefited by this bill, and I can affirm, from personal knowledge of the facts, that with the first framers of this bill, the public, and not the practitioner, was the sole object in view in all its stages. If the author of this excellent paper has not seen what testimonials are required by the court of examiners, to prove the eligibility of candidates for examination, he will find, from the enclosed printed document, that the work is not superficially done, and that it is the respectability, and not the remuneration, which is comparatively trifling, which tempts gentlemen to accept of the important trust of an examiner. I have written this in a hasty manner, after the professional fatigues of the day; but I can with truth assure your sensible correspondent, that the powers vested in the Apothecaries' Company have been hitherto exercised with great liberality, at the same time fulfiling their duties conscientiously, both to the candidate and the public. Although this act is grounded upon the original act of their charter, the objects of the bill have nothing to do with the private and trading interests of the company, which are altogether distinct things, and does not affect their common privileges as previously enjoyed, with the exception of a small additional income from the examinations.

APOTHECARIES' HALL.

Regulations for the Examination of Apothecaries.

The Court of Examiners, chosen and appointed by the Master, Wardens, and Assistants of the Society of Apothecaries of the City of London, in pursuance of a certain act of Parliament, " For better regulating the Practice of Apothecaries throughout England and Wales," passed in the 55th year of the reign of his Majesty King George the Third, have determined:

That every person who shall be admitted to an examination for a certificate to practise as an Apothecary, shall be required to produce

Testimonials of having served an apprenticeship of not less than five years to an Apothecary, of having attained the full age of twenty-one years, and being of a good moral conduct.

He is expected to possess a competent knowledge of the Latin language, and to produce certificates of having attended not less than

Two Courses of Lectures on Anatomy and Physiology,
Two Courses of Lectures on the Theory and Practice of Medicine,
One Course of Lectures on Chemistry, and
One Course of Lectures on Materia Medica.

A certificate of attendance for six months at least on the Medical Practice of some Public Hospital, Infirmary, or Dispensary.

The Court have also determined, that the examination for a certificate to practise as an Apothecary, shall be as follows:

1. * In translating parts of the Pharmacopœia Londinensis, and Physicians' prescriptions.
2. In Pharmaceutical Chemistry.
3. In the Materia Medica and in Medical Botany. †
4. In Physiology.
5. In the Practice of Medicine.

Regulations for the Examination of Assistants.

That every person who shall be admitted to an examination for a certificate to act as an assistant to any Apothecary, in compounding or dispensing medicines, shall be required to translate parts of the Pharmacopœia Londinensis, and Physicians' prescriptions; and shall be examined as to his knowledge of Pharmacy and Materia Medica.

Notice.

Every person intending to qualify himself under the regulations of this act, to practise as an Apothecary, must give notice in writing, addressed to the Clerk of the Society, on or before the Monday previously to the day of examination; and must also, at the same time, deposit all the required testimonials at the office of the Beadle, at Apothecaries' Hall.

The Court will meet in the Hall every Thursday, where candidates are requested to attend at half past one o'clock.

By order of the Court, JOHN WATSON, *Secretary.*
London, June 1, 1820.

It is expressly ordered by the Court of Examiners, that no gratuity be received by any officer from any person applying for information relative to the business of this Court.

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* The Court are extremely anxious to impress upon those persons, who may be intending to present themselves for examination before them, a conviction of the absolute necessity of such knowledge of the Latin language as may enable them to translate the Pharmacopœia Londinensis, and prescriptions of Physicians, which they consider as a qualification indispensable to the Apothecary.

They are particularly induced to give greater publicity to this regulation, because they have had the distressing duty imposed on them of withholding certificates of qualification from several persons, principally from their great deficiency in this most important prerequisite to a medical education.

† By Medical Botany is to be understood those indigenous plants only, which are contained in the Pharmacopœia Londinensis, and such indigenous plants as are esteemed of a poisonous quality.

Extracts from the Act " For better Regulating the Practice of Apothecaries throughout England and Wales."

That from and after the first day of August one thousand eight hundred and fifteen, it shall not be lawful for any person or persons (except persons already in practice as such) to practise as an apothecary in any part of England or Wales, unless he or they shall have been examined by the Court of Examiners, or the major part of them, and have received a certificate of his or their being duly qualified to practise as such, from the said Court of Examiners; who are authorized and required to examine all person or persons applying to them, for the purpose of ascertaining the skill and abilities of such person or persons in the Science and Practice of Medicine, and his or their fitness and qualification to practise as an Apothecary.

That from and after the first day of August one thousand eight hundred and fifteen, it shall not be lawful for any person or persons (except the persons then acting as assistants to any Apothecaries, and excepting persons who have actually served an apprenticeship of five years to an Apothecary) to act as an assistant to any Apothecary, in compounding or dispensing medicines, without undergoing an examination by the Court of Examiners, or by five Apothecaries, so to be appointed as hereinafter is mentioned.

That it shall and may be lawful to appoint five Apothecaries in any county or counties respectively throughout England and Wales (except within the said city of London, the liberties or suburbs thereof, or within thirty miles of the same) to act for such county or counties, or any other county or counties near or adjoining; and such five Apothecaries are authorized and empowered to examine all assistants to Apothecaries throughout the county or counties in regard of which such Apothecaries shall have been so appointed as aforesaid.

That if any person (except such as are then actually practising as such) shall, after the said first day of August one thousand eight hundred and fifteen, act or practise as an Apothecary in any part of England or Wales, without having obtained such certificate as aforesaid, every person so offending shall, for every such offence, forfeit and pay the sum of twenty pounds; and if any person (except such as are then acting as such, and excepting persons who have actually served an apprenticeship as foresaid) shall, after the first day of August one thousand eight hundred and fifteen, act as an assistant to any Apothecary, to compound and dispense medicines, without having obtained such certificate, every person so offending shall, for every such offence, forfeit or pay the sum of five pounds.

That no Apothecary shall be allowed to recover any charges claimed by him in any court of law, unless such Apothecary shall prove on the trial, that he was in practice as an Apothecary prior to or on the said first day of August one thousand eight hundred and fifteen, or that he has obtained a certificate to practise as an Apothecary.

That the said Master, Wardens, and Society of Apothecaries, do make annually, and cause to be printed, an exact list of all and every person who shall in that year have obtained a certificate to practise as an Apothecary, with their respective residences attached to their respective names.

Account of the Effects produced by injecting an Aqueous Infusion of Fox-glove (Digitalis purpurea) into the Jugular Vein of a Dog. Communicated by Richard Pearson, M. D.

In the following experiment the operation was performed by Mr Jukes, house-surgeon to the Birmingham Hospital, in the presence of Dr Booth, (one of the physicians to that institution,) and of myself. Immediately after the operation, Mr Jukes undertook to note down the result, which I transmit in his own words.

"*April 20th* 1820.—I exposed the external jugular vein of a small sized terrier, and injected two drachms (by measure) of the infusum digitalis, (of a blood-warm temperature,) containing 7½ grains of the dried leaf. Before I could sew up the wound, the dog was seized with violent struggling, which lasted for a minute or two, followed by a drowsy state, though without sleep.* I make no doubt he would have remained several minutes in this condition, had we not have placed him on his legs. His pulse previous to removing him was 64 in the minute, (being about 7 minutes after the injection,) and evidently affected by the foxglove. In 2 minutes more, he voided a costive stool. Between the one-fourth of an hour and 20 minutes, his countenance depicted considerable anxiety, and he frequently elevated his head, putting his throat on the stretch. At the expiration of 20 minutes, saliva flowed involuntarily from his mouth. Pulse exceedingly small and intermittent, rarely exceeding 58 or 60 beats in the minute. At 22 minutes, he vomited, and in the effort caused a slight hæmorrhage from the wound. At 25 minutes he voided a small quantity of urine, seemed distressed, and began to run about. Pupils at this time had become widely dilated, but possessing the power of contraction on exposure to vivid light. No paralysis whatever.† At 35 minutes pulse even weaker, 60 beats in a minute; apparently more drowsy, or at least a frequent closing of the eyelids, but not insensible to noise. At 40 minutes, after exhibiting a sense of dryness of the fauces by motions of his mouth, he eagerly lapped water which was offered him. At 47 minutes he again lapped water, immediately after which he got up, stretched himself, and vomited up the whole. He then crept into a corner, and curled himself up for sleep. For several hours after he continued occasionally sick and lazy. The next morning he was quite recovered."

I cannot help availing myself of the present opportunity to remark, that no physiological experiments were ever so badly conducted as those by Courten, related in the 27th vol. of the Phil. Trans. Fifty grains of opium in an ounce of water, injected at once! One ounce of camphorated alcohol, in another instance, injected at once! One ounce of decoction of tobacco, used in like manner at once! Death, as might be expected, was in every one of these cases the result. But if only the 25th part of the opium solution, the 30th part of the camphorated alcohol, and the 40th part of the tobacco decoction, had been injected, the animals (it may be presumed) would not have died, and the facts would have been interesting.

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* That is to say, a dull and quiescent state,—a state of collapse, but without actual sleep.

† Some days previously, 4 grs. of opium diffused in ʒii of distilled water, had been injected into the jugular vein of a different dog, producing in the first instance coma and stertor, and afterwards paralysis of the hind limbs. The animal was well the next day.

P. S.—In my former letter, I mentioned the circumstance of several persons in this neighbourhood having been last summer bitten by a mad dog. Excision of the bitten parts was resorted to at the time, (in one case not till three days after the bite,) and all have hitherto remained free from the disease.

Extract of a Letter from ROBERT LISTON, *Esq. Member of the Royal College of Surgeons, Edinburgh, to Dr* DUNCAN, *Jun.*

As you expressed your approbation of my mode of operating in cases of diseased bone in general, and more especially of the means employed in removing part or whole of the metacarpal or metatarsal bones, I beg you will allow me to state shortly the many advantages attending such plans of operating, and to illustrate the remarks with a few cases.

I was induced to turn my attention to the simplification of these operations, from the difficulty I frequently experienced in my first cases of this kind; but more so from witnessing many hundred cruel and protracted attempts, and frequent failures in the removal of such diseased parts. Hey's saws (as they are improperly called) can seldom be used with advantage, unless on the cranium; the half-headed trephines are worse than useless. The chain and annular saws, in any case in which I have seem them used, have either broken, or got so wedged, that it was necessary to cut them out by other means or sacrifice the limb. The whole of them require so much destruction of the soft parts before they can be applied, that even on this ground they are inadmissible.

From the reasons above stated, I was forced to turn my attention to the subject, and had cutting plyers made of different shapes and sizes, so as to operate in every direction. After having used them frequently, I found in a number of your valuable Journal, an account and sketch of a kind of scissars, which Mr Griffiths, an army surgeon, had used for some case attended with peculiar circumstances. His instrument, however, seems to differ materially from any of those I have employed, and would possess much less power. I am perfectly convinced that many extremities have been removed when the diseased portions of bone might have been advantageously cut out, merely from the difficulty of the operation, and want of proper means to accomplish it. The removal of the carpal or tarsal bones, and those connected with them, is in general considered one of the most difficult operations in surgery. To show the possibility of saving limbs, by the removal of the diseased part, in the most desperate circumstances, even when the health is much impaired, allow me to relate briefly two cases out of several on which I have operated.

May 1818.—C. B. æt. under 12 years, had disease of the ankle-joint for two years and a half, rendering her completely lame. An opening on the fore part, discharging a great quantity of thin fetid matter, led to the diseased tarsal bones. Her health was much impaired. Pulse never under 120. All the symptoms of hectic. The amputation of the limb had been proposed by above a dozen of surgeons.

Dr Sanders had the kindness to consult me under the circumstances. He stated to me a case very similar, in which, many years before, he had, by the application of caustics, &c. removed the unsound parts, and produced a perfect cure. Encouraged by this, we agreed to make at least an attempt to save the limb, well knowing that the amputation would not be the less successful, if necessary. Accordingly, I cut down on the articulation, broke down the spongy carious bones, and removed with my forceps all the loose fragments. In a day or two the cavity was filled with red precipitate, and at the next dressings the remaining portion of the astragalus, articulating end of the tibia, or naviculare, and two of the cuneiform bones were pulled out. On the seventh day after the operation, violent hæmorrhage came on, but stopt spontaneously, nor could the place from whence it came be ascertained. In two days the bleeding recurred, and was then found to proceed from the lower end of the anterior tibial; this vessel was cut on, and secured by ligature. Granulations sprung from the end of the tibia, as also from the place occupied by the tarsal bones, and a complete and lasting cure, without much deformity or lameness, was the result.

—— Wilson, a man of an unhealthy look, about 25 or 30 years of age, hectic, from caries of the head of the right tibia of long duration. An opening on the outside of the tuberosity, close to the joint, discharged a profusion of fetid matter. Amputation had, by all the surgeons whom he had consulted, been proposed, as the only means of saving his life. I cut down on the part, by a large trephine applied twice, made room through the outer lamina, and by the cutting-plyers and scoop, removed the diseased parts, carrying my excavation to the depth of an inch and a half, and towards the joint, so as only to leave the cartilage betwixt me and the cavity. By the after use of the eau mercurielle the bone granulated, and the limb has become quite serviceable. By means of the sharp forceps, the cutting edge of which is on a line with the handles, we are enabled, with the greatest ease, to cut across any of the metacarpal or metatarsal bones, and even the radius, ulna, or ribs. The use of these instruments requires a considerable degree of strength, but it is to be remembered, that in such subjects as these operations are requisite, the bones, from the scarcity of earthy matter, are more easily divided. By means of those instruments it is quite possible to remove any portion of bone with less division of the soft parts, and by as smooth a surface as by any saw, however fine. So simple and speedy is this operation, that I even prefer the use of the forceps to the saw, in cases where it is necessary to remove the finger or toe.

It is unnecessary for me to relate cases in confirmation of what I have advanced, as any surgeon can satisfy himself by a trial on the dead body, of the efficacy and safety of the instruments. Suffice it to say, that I have used them in a great variety of circumstances, and on almost every bone of the body, as well in the removal of diseased portions as in amputation. Any of these operations may be accomplished in a few minutes, if even minutes are necessary. I may mention, that I have found these forceps most useful in dissections, for dividing the ribs, &c. and likely, for that purpose, completely to supersede the saw. I may also notice, that I am in the habit of using, in cases of necrosis and others, very strong forceps or plyers for the removal of spiculæ, as I have seen more pain and suffering from the slipping, bending, or breaking of the commonly-employed contrivances, than I should choose to describe.

By referring you to Mr Young, a most ingenious cutler in College Street, who has patterns of all the different forceps, and who will be happy to supply any gentleman with them, I shall be saved the trouble of sending you a representation, or giving any particular description of them.

By supplying a deficiency in the instruments for our operations on the hard parts, I hope it will not be supposed that I am an advocate for new or complicated contrivances for any surgical proceeding.

George Street, Nov. 17, 1820.

Extract of a Letter from Dr Dickson *of Clifton to Dr* Duncan, *Jun.*

You have probably already heard of the death of Mr Baynton, which, I lament to say, took place soon after my last brief communication relative to his treatment of mortification of the extremities by pressure, inserted in the 65th number of the Medical and Surgical Journal. I need not tell you that Mr Baynton enjoyed a high and extensive degree of professional reputation and employment. To those who knew him personally, it is as little necessary to bear testimony to the obligingness of his disposition, and the goodness of his heart; for, sanguine in prognosis, and successful in practice, he was equally fortunate in gaining the confidence, and in preserving the friendship of his patients, by a large circle of whom he is deeply and deservedly regretted. He was also well known as the author of two valuable practical works, suggesting improved methods of treating ulcers of the legs and diseases of the spine; the merits of which must be rated very high, if the number of patients which they attracted to him from various and distant parts of the country be admitted as any criterion. Having been in habits of intimacy with Mr Baynton, I have upon several occasions heard him mention his intention of publishing a second edition of the latter treatise, which the fulness of his professional avocations caused him from time to time to defer; but, in justice to him, I ought to observe his having repeatedly noticed to me, that much additional experience since its publication in 1813 had, in his estimation, fully established and confirmed his favourable opinion of the plan of treatment therein recommended.

I have lately been favoured with some important communications from Dr Jenner, on the effect of serous or herpetic eruptions of the skin, and of the scalp, (more especially a dirt-like exudation from the latter, which has too often escaped observation,) in modifying and even destroying the protecting influence of vaccination. I enclose an interesting extract from one of his letters, on what have been called varioloid diseases; and, with his permission, would have requested you to publish it, did not the following sentence of a letter just received from the celebrated writer render this step unnecessary:—"I am about to issue a circular, which will embrace more detail than I have communicated to you, and which it is my intention to promulgate through every accessible channel of publicity. This will form the mere anticipation of a paper, which I intend to give within the earliest convenient period of time, treating this important subject in a more comprehensive manner than has yet been designed."

Dr James Clarke.

In the death of this much lamented young gentleman an unspeakable loss is sustained by society at large, and by that profession in particular to which he promised to be an ornament, and was already an honour. Born to affluence, (through the signally successful career of his universally respected, and now much to be commiserated, father,) he nevertheless applied himself to professional pursuits, as if they were to be the source of his comfort and respectability in the world; if he even intermitted them, it was to employ a short interval among his tenantry, that he might know their wants, and omit no means of improving their morals, and ministering to their comfort. Cold, caught in one of those rapid excursions, seems to have specially predisposed him to contagion in the fever-hospital,* with the care of which he had charged himself. Most justly, therefore, may he be regarded as having fallen a sacrifice at once to public spirit and to private virtue. How universally he was esteemed was shewn by the anxiety which was manifested for him while hope remained, and by the gloom which on the last day of his life seemed to pervade the city. In the judgment of those who knew him best, a more noble-minded, generous, and worthy young man, without exception, never existed. He died at his house in Rutland Square, Dublin, on Thursday the 5th instant, in the 33d year of his age.

ERRATA.

In the last Number two errors occurred, which it is necessary to correct without delay.

The case of Accidental Poisoning, at page 510, was *communicated* only by Dr Thomas; it was *written* by the husband of the lady to whom the accident happened.

The remarks on the Use of Nitric Acid as a Blister, p. 544 and 545, were written by Mr William Scot, and not by Mr Killett, to whom they were ascribed by a transposition of the communications.

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* House of Industry.

THE

EDINBURGH
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No. LXVII.

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NOTICES TO CORRESPONDENTS.

Communications have been received from Drs Arthure and Knox; and Messrs Baird, Dawson, Nicol, Swan, Wayte, Kind, and Theoreticus.

We have received for Review:

A Manual of the Diseases of the Human Eye, intended for Surgeons commencing Practice, from the best National and Foreign Works, and in particular, those of Professor Beer; with the Observations of the Editor, Dr Charles H. Weller. Berlin, 1819. Translated from the original German work, and illustrated with Cases and Observations. By George C. Monteath, M. D., &c. Two Vols. Plates. 8vo. Glasgow, 1821.

A History of the Epidemic Fever, which prevailed in Bridlington and the Neighbourhood, in the years 1818 and 1819. By Humphry Sandwith, Surgeon, Bridlington. Also Observations in Medicine and Surgery, by Thomas Sandwith, Surgeon, Beverley. 8vo. Lond. 1821.

Cases illustrative of the Treatment of Obstructions in the Urethra, &c. by the new Instrument, the Dilator; with further directions to facilitate its general adoption: also a Case of the Extraction of Stone from the Male Bladder without cutting it, by the Dilator; with an Account of Improvements of the Method of Dissolving Stone by Injection, and of the common operations of Lithotomy, By James Arnott, Member of the Royal College of Surgeons in London. 8vo. Lond. 1821.

Practical Observations on the Use of Oxygen, or Vital Air, in the Cure of Diseases; to which are added, a few Experiments on the Vegetation of Plants, illustrated with Five Engravings. By Daniel Hill, M. D. Surgeon, Honorary Member of the Medical Society at Guy's Hospital, and Fellow of the Horticultural Society. 8vo. Lond. 1820.

Versuche ueber die Wege auf welchen Substanzen aus dem Magen und Darmkanal ins Blut gelangen, ueber die Verrichtung der Milz und die geheimen Harn-Wege. Von. F. Tiedemann und L. Gmelin, Professoren in Heidelberg. 8vo. Heidelberg, 1820.

A Dissertation on the Treatment of Morbid Local Affections of Nerves; to which the Jacksonian Prize was adjudged by the Royal College of Surgeons. By Joseph Swan, Member of the Royal College of Surgeons, &c. 8vo. Lond. 1820.

An Account of a New Method of making Dried Anatomical Preparations. By Joseph Swan, Member of the Royal College of Surgeons, &c. 8vo. Lincoln, 1820.

A Statistical Inquiry into the Frequency of Stone in the Bladder, in Great Britain and Ireland. By Richard Smith, Esq. Senior Surgeon to the Bristol Infirmary. 8vo. Lond. 1820.

Revue Medicale, I^{re} Année VIe Livraison, and IIe Année, I^{re} Livraison.

The Editors are preparing a General Index to the Edinburgh Medical and Surgical Journal, which will probably be published soon after the Twentieth Volume.

THE

EDINBURGH
MEDICAL AND SURGICAL JOURNAL.

1. APRIL 1821.

PART I.
ORIGINAL COMMUNICATIONS.

I.

Sketch of a Plan for "Memoirs on Medical Topography."

We now proceed to redeem the promise made in the 65th number of this Journal, and offer to the consideration of our readers a plan upon which it appears to us that the medical topography of a town, a district, or a country, may be advantageously drawn up. That in preparing this outline, we have either exhausted the subjects of inquiry, or even that we have indicated them all, we are very far from supposing; but we trust it will be found that few points have been entirely omitted which are essential to the medical topographer; and we are convinced that, taking the present hints as the basis of his inquiries, he may render important services to science in general, while he materially assists himself in attaining a knowledge of external circumstances which exert considerable influence upon the health of those among whom he may exercise his profession. *

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* We take this opportunity of noticing an omission in the article on the "Medical Topography of Canada," which has called forth the present sketch; we allude to a paper by Mr Royston, in the Medical and Physical Journal, Vol. XXI. which should have held a prominent place in our enumeration of British authors.

We shall divide our objects of inquiry into four general heads, and these, again, we shall subdivide into specific subjects. Under the first head we shall include the Physical Geography of the place to be described, comprising notices on its botany, mineralogy, and natural history. The second head will refer to the Inhabitants, including an account of their food, habitations, customs, &c. Under the third head will be classed such subjects of inquiry as are connected with Diseases whether endemic, epidemic, or sporadic; which appear under the form of epizooties among the lower animals; or which affect the products of vegetation. To the fourth head will be referred miscellaneous objects of inquiry, or such as could not be so well arranged under any of the preceding. Many of the subjects are so closely connected that they fall under more than one head, and they will be treated most in detail in that division of the subject under which they seem most naturally to range themselves.

I. *The Name—the Latitude, Longitude, and Boundaries.*— These heads require little or no comment. If the place to be described is extensive, it will be necessary to note whether the situation is insular, or a part of a continent. If it is only a small district or town, it will be necessary to state what distance it may be from the sea, and what elevation above it; what distance it may be from the metropolis, and the modes of communicating with it.

The Seas—the Rivers—the Lakes—the Wells—the Morasses —the Bogs, and the Canals.—These are points upon which the topographer should bestow considerable attention, as they so materially affect the dryness or moisture of a country. The nature of the deposits, animal, vegetable, or mineral, which are left by the waters, should be accurately ascertained; as on them, especially in warm countries, the most important consequences depend. The height to which the tide may rise in a river, as well as the rapidity or sluggishness of the stream, will materially affect these depositions, while the physical features of its banks, and the tortuosity of its meanders, will possess considerable influence by concealing or exposing them to the sun and the winds; hence also the depth of the waters, the soil through which they flow, or in which they stagnate; the height of the banks, the materials of which they are composed, the shelter which they afford, the nature of that shelter, whether of sedge, underwood, full grown timber, or rock, should all be pointed out, and the accidental or periodical accumulations of filth or alluvial materials which pollute or enrich the stream, should be described. The inhabitants of the waters, as well as their vegetable products, become incidentally an object of investigation, as they may conduce to the nourishment or the destruction of man; and, as many of them fix their "habitat" in waters peculiar for their rapidity, their clearness, or their slime, their presence may often distinctly mark the existence of such peculiarities. The surface for evaporation presented by the canals, the rivers, and other masses of water; the aid which they may contribute to the drainage of a country; the facilities which they may afford to agriculture and commerce; and the fitness of their waters for culinary purposes, are all objects of investigation. The state of the subterraneous moisture should be inquired into; and this is frequently demonstrated in low marshy countries, as Zealand, by the state of the wells, which are fed by the subterraneous water with which they are on a level. Indeed, the comparative healthiness of the villages in the Netherlands is easily ascertainable by the inspection of their wells, the waters in which sink in proportion to the droughts of summer, and afford a proof of the constant exhalation of concealed moisture.* The nature and effects of those exhalations which arise from low muddy beaches should be specially inquired into, and no opportunity should be lost of ascertaining a point which seems not yet to be perfectly agreed on, viz. how far the admixture of fresh water may accelerate or retard the corruption of the animal and vegetable materials deposited upon them.†

The Mountains—Their height, extent, and general direction; the snows with which they may be covered periodically or throughout the year; the rivers or streams which may arise in them; the forest timber, plants, and minerals with which they may abound; the passes through them, and the influence they may exert over the currents of the winds; the interjacent vallies, and the state of their temperature, compared with that of the surrounding elevations, should all be noted.‡

The Climate.—A complete system of meteorology is not only unnecessary for the purposes of medical topography, but is of such difficult execution that the life of man seems inadequate to effect it; it is absolutely necessary, however, that some of the leading facts connected with the physical characters and medical effects of the climate should be given. The steadiness or mutability of a climate is a physical property which seems more to influence the health of man than either its heat or its cold, abstractedly considered; and a knowledge of this can only be acquired by long and correct personal observation, or by averages drawn from the observations of several preceding years. Dr Chisholm has given us a very good idea of the climate of Bristol and Clifton by an average table of the number of wet and dry days for a period of fourteen years together, with an account of the prevalent winds upon the same principle. Dr Clarke also has given us some good views of the temperature of Nottingham. * In whatever mode the topographer may choose to proceed, he should give accurate accounts of the highest, lowest, and medium states of the thermometer, barometer, and hygrometer, for two or three years at least, together with an account of the prevalent winds, and the occasional fogs, meteors, hurricanes, &c. It must be observed, however, that nothing can be more jejune and uninteresting than a protracted enumeration of the daily variations of the atmospheric temperature, weight, and moisture, or of the different shiftings of the winds, if the person who describes such occurrences does not deduce from them some practical information, by marking the effects which they produce upon the health of man and upon the face of nature. Hence it is that many of those volumes which have cost their authors the minute labour of years to compose, lie so often unconsulted amid the lumber of the library; but if to the changes of the state of the atmosphere is added an account of the manifest influence which they have exerted on the health of those who were previously well, or on the diseases of the sick and convalescent,—then an otherwise trivial piece of information is converted into an interesting and an instructive fact. In like manner, if any particular state of the weather has a marked effect upon vegetation, it may consecutively produce a very powerful influence upon the health of the inhabitants of the district where it has prevailed. Upon the whole, while the medical topographer should by no means neglect minute and regular observations upon the changes of the weather, he should consider them not as a primary object of research, but should view them as merely subservient to the great purpose of explaining the origin and progress of disease; and it is by comparing the cause and the effect together, and repeating the comparisons faithfully and frequently, that regi-

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* Pringle, Diseases of the Army, Chap. 1. Part I.

† Vide Lancisi De Nox. palud. effluv. Lib. I. P. I. Cap. 5.

‡ In general for every 200 feet of elevation one degree of decreased temperature may be expected. The effects of the funnel-shaped chasms in the Ghauts of India, in tempering the heats of that country, are most remarkable.

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* Ed. Med. and Surg. Journ. Vols. V. VI. and XIII.

sters of the weather can ever be made available to useful purposes; or, as it has been happily expressed by a contemporary journalist, can "illumine that darkness of conjecture, reconcile that contrariety of assertion, and reduce to a rational system that facility of belief which has so long existed upon atmospherical influences." These comparisons should be fully stated in detail, for few readers will stop in the course of their perusal to refer to an appended weather table, and wade through the slow, dull, and dubious process of comparing degrees of the thermometer and the anemoscope, with the variations of health. These records lose their utility and their interest by separation, and it is in vain to deny, that the most faithful recital of facts will often fail to make any impression, if they entail on the reader extraordinary and monotonous labour.

There are such a multiplicity of forms for registers of the weather, that the topographer can be at little loss in selecting a model, or in procuring from the observatories of large towns correct and satisfactory details; but it would be extremely desirable that the degrees of the thermometer in the sun, to which the labouring classes are so much exposed, should be occasionally stated; and it should also be kept in view, that, if the observations are made uniformly at the same hour of the day throughout the year, the atmosphere will have felt the influences of that planet for a much longer period at some seasons than at others, previous to registering the height of the mercury. In detailing the state of the winds, it will be of essential importance to describe what tracts of land or water they blow over, and how far these may influence the deposition or absorption of heat and moisture, may alter the direction and force of their currents, or may affect the exhalations which they import or carry off; extensive tracts of forest will greatly modify the effects of the wind, and even a comparatively small number of trees will act as a check on healthful ventilation, or will intercept the baneful miasmata of marshes. The ordinary effects of the atmosphere on inanimate substances should be noticed; in some districts all polished metal speedily rusts, and the existence of saline particles in the air is inferred in others, by the remarkable fading of those dyed stuffs which require acids to fix or heighten their colours.* Some peculiar states of the atmosphere have been observed to precede certain epidemic affections; thus, Dr Rush states, that substances painted with white lead, and exposed to the air, have suddenly assumed a dark colour, and that a smokiness or mist in the atmosphere has generally preceded a sickly autumn in some of the American states.* Although we are ignorant of the causes, we know that the long prevalence of certain winds frequently predispose the living body to disease; the effects of various winds are also remarkably displayed in the phenomena observable on trees and buildings. In the American forests, the bark on the north side of a tree uniformly thickens, and the northern side of a brick building is said to be much more difficult to pull down than that of any other aspect. In our own country, buildings of certain species of stone ooze forth moisture, or effloresce in those points where they are exposed to particular currents of wind. In all times, certain winds have been observed to produce deleterious effects on wounds and ulcers; these effects have proceeded from the south winds in some countries, from the east in others; at Gibraltar, such was the deleterious effect of the latter wind upon the wounded after the battle of Algiers, that the Leander left that station without waiting for her supplies,—a privation which was amply compensated, by the improved state of the invalids, so soon as they were removed.† In our own country, certain seasons are more productive of buboes than others, and under certain states of the atmosphere, not yet clearly understood, both these and all other venereal sores take on simultaneously a malignant character. The effects which the climate produces, or is supposed to produce, in the alleviation of certain diseases, as phthisis, syphilis, hooping-cough, &c. should be distinctly and fully described, while, at the same time, those complaints in which it proves manifestly injurious, or where it retards convalescence, should likewise be mentioned. These points will also come to be more fully considered under the head of Diseases.

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* Chalmers's Diseases of South Carolina, Vol. I. p. 11.

The Soil.—It will be of great importance to describe the general nature of the soil, and its elevation above the adjacent seas or other waters, and to particularize those properties by which it may favour the retention or the transmission of water, either at the surface or at a distance from it. With this in view, it will be necessary to state the proportions of pasture, arable and wood land, and whether the soil is alluvial, rocky, gravelly, clayey, sandy, &c. while the stratification or intermixture of all these materials, as far as they have been ascertained, should be mentioned. The periods of the year at which noxious exhalations arise from the soil in greatest abundance, will become an important subject of inquiry; at the same time, it will be necessary to investigate the extent to which evaporation may have proceeded when these exhalations become most deleterious. That they most abound when the waters are nearly or quite expended, has been observed by able physicians, and they have also endeavoured to account for it, by supposing, that the sun's rays then penetrating the miry soil, exalt vapour which had been long pent up, and may be supposed to have contracted vicious qualities, or become concentrated from having remained undisturbed by the wind. Whatever may be the cause, it is certain, that, in many countries, the malaria does not arise until all the surface water has totally disappeared, and leaves the whole face of the country, including the very courses of the winter streams, an arid desert.*

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* Rush's Works, Philadelphia, 2d Edition. Vol. IV. p. 174.

† Quarrier, in Med. Chir. Trans. Vol. VIII. p. 7.

The Vegetable, Animal, and Mineral Products of a country have a powerful influence over the health of the inhabitants, and should be examined under the various points of view in which they may contribute to their food, their clothing, their warmth, and their domestic comforts; or as they may promote or retard these in a secondary way, by influencing population and manufactures, favouring the influx of new inhabitants, introducing new modes of living, or becoming subservient to the operations of commerce. In countries which abound in certain vegetable products, the effects of moisture and putrefaction are often found seriously to affect the health; of this the culture of rice and various other plants are striking examples. The rearing of certain animals, as the silk worm of Lombardy, and the Merino flocks of Spain, considerably affect the face of the country, and give a new character to the natives. The periodical visits of certain birds, fishes, and even insects, prove most seasonable articles of supply in some instances, or are destructive to comfort and life in others. The presence of extensive mines is marked with peculiar features by the hand of nature. Among the more prominent instances of this may be mentioned the gold and silver districts of Peru, the quicksilver mines of Almaden, and those of lead and tin in our own country, where external poverty and desolation reign; while the presence of coal, wherever it is wrought, is the sure forerunner of a crowded and manufacturing population. The early appearance of many plants, and the slowness or rapidity of their vegetation, the torpidity, arrival and departure of many quadrupeds, birds, and insects, will often mark more strongly than the indications of the glass, the nature of a climate; and the judicious naturalist will avail himself of the circumstances in his topographical description. Strong indications of the healthfulness of a country may be drawn from its plants and animals, and the approach of unhealthy seasons has often been marked by the changes produced on them. In America the common house fly has disappeared, while musquitoes have been multiplied, and several new insects have been observed previous to some of their malignant epidemics; and, at similar periods, certain trees have emitted unusual smells, the leaves of others have fallen prematurely, and the fruits have been of inferior size and quality; while, in some places, an unusual growth of vegetable productions (fungi) has preceded the most destructive scourges of mankind.

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* See Chalmers's Diseases of South Carolina, Vol. I. p. 6. Fergusson, Med. Chir. Trans. Vol. VIII. p. 132.

To give a complete medical topography, all the products of the district, whether poisonous, edible, medicinal, or employed in the arts, should at least be enumerated, and should be particularly investigated as far as they may immediately affect the health of man. Among the various products, those which are applicable to medical purposes should be specially described, and this, whether they enter the established pharmacopœia, or are employed as succedanea by the regular practitioners, or as specifics by the inhabitants or by empirics. The most approved modes of preserving and preparing them should be fully detailed, together with their doses and sensible effects. In this enumeration, the mineral waters will claim peculiar attention; the complete analysis of these should be given, or at least such experiments should be made upon them as may serve to point out the most prominent articles with which they are impregnated, at the same time should be mentioned the articles with which they are adulterated, improved, or imitated at the spring, or at more distant places. The temperature of thermal waters will of course be mentioned, together with the effect which their external application produces, or is supposed to produce, upon those who have recourse to their aid. Saline springs not used for medicinal purposes, or mines of rock salt, alum, &c. whether wrought or unwrought, will be well deserving of notice.

The State of Agriculture.—This has a manifest and powerful influence on the health of the inhabitants of a country, and should therefore be fully considered, and not only are the immediate effects of cultivation of importance to be known, but it will be also necessary to inquire into the effects of such after-processes as are ascertained or suspected to be unhealthful, especially where the putrefaction of the substances treated is a necessary part of them, as the preparation of flax, &c.

The State of the Roads and Communications.—The facilities of communication are of such essential importance to the comfort and health of the inhabitants of a country as to deserve being distinctly noticed.

A map of the places described will greatly enhance the value of a topographical description; nothing more will be necessary except a simple outline of the boundaries, of the direction of the mountains and rivers, and of the situation and extent of the forests, lakes, morasses, bogs, &c. A sketch of the stratification of the soil would also be a valuable addition to the view of its surface.

II.—*The Population.*—The aggregation of large masses of human beings produces effects so important upon their health as to become a special object of inquiry to the topographer; he should, therefore, endeavour to obtain the most correct statements within his power. If, in a country parish or district, he should compare the numbers of inhabitants with the space over which they are spread; and if in a town or city, he should ascertain the bounds within which they are pent up, and how far the evils of confinement are aggravated or relieved by various external circumstances, of which the following are the most important.

The Dwellings.—In describing the dwellings the medical topographer should notice the exposure, the soil on which they are founded, their elevation above it, the materials of which they are built, the mode in which they are finished, especially as concerns their dryness, their warmth, and their ventilation, and the facilities afforded to the inhabitants for preventing or removing accumulations of filth. Under this view will come to be examined the nature and extent of the cess-pools and sewers proceeding from the houses to the common receptacles of filth, and, above all, the conveniences for the reception of human ordure. It is a fact well worthy of attention, that the inhabitants of those buildings which are run up in a slight manner at the back of a row, and exposed to the effluvia of privies, have been found most susceptible of the contagion of typhus fever. * The average number of inhabitants in each dwelling, the cubical contents of their rooms, and the number and direction of the means of ventilation, should be ascertained with a view to show how far they may enjoy the advantages of a free circulation of pure air. Much sophistry and much special pleading have been employed to invalidate the opinions of those who hold that the effluvia arising from the human body in close and crowded situations are productive of contagious diseases; but the facts collected upon this point appear to be incontrovertible.

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* Ferriar, Medical Histories and Reflections.

The mode in which the streets are laid out, their width or compactness, their pavement, their drainage,[*] their exposure to the sun and to the wind, are considerations of much importance. The difference of a few paces may make a very considerable difference in the health of the inhabitants; thus at Rome some streets, nay certain points, sides, and even houses, of some streets are more damp, chilly, and exposed to the malaria, than others.[†] In many of our own towns certain streets or districts have been always remarkable for fever, and they have been as remarkably exempted from its attacks when the air has been allowed freely to percolate them by the removal of old walls or compact masses of houses, which prevented ventilation and the access of the solar influence. In our own city nothing but the violent gusts of wind, which occasionally perflate our densely built wynds and closes, could check the generation and progress of disease.

The Bedding, Clothing, and Furniture.—With the superfluities of the rich the medical topographer has little to do; but on the necessary supplies of these articles in possession of the poorer and more numerous part of the population, much of their comfort and health depends. A sufficiency of bedding and clothing to obviate cold and moisture is indispensable to health; and, during the prevalence of contagious diseases of the typhoid class, is of the utmost importance as a preventive. A very striking illustration of this will be found in the medical report of Dr Ainslie, Mr Smith, and Dr Christie, on the epidemic fever which lately ravaged an extensive district in India. Wherever the inhabitants were elevated above the surface by settles or bed-frames, and defended by rugs, there the disease was decidedly less frequent and less fatal in its consequences.

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[*] Compact gutters, by preventing the sinking of the water into the earth, are reckoned by Dr Rush one cause of the unhealthiness of Philadelphia.

[†] See Clarke's Medical Notes. The wards of the Santo Spirito Hospital to the south and south-east are more insalubrious than others, and the lower apartments of some hospitals are affected with the malaria, while those immediately above escape its influence. A very slight obstacle, as a gauze curtain, is said to prevent the entrance of the malaria at Padua. In the West Indies, soldiers residing in the lower part of the barracks were found to be more liable to yellow fever than those in the upper, in the proportion of 2 to 1. See Fergusson in Med. Chir. Trans. Vol. VIII. p. 587.

Every article of furniture which can aid in the promotion of cleanliness, in the preservation and cooking of food, and in other purposes subservient to domestic economy and personal comfort, must essentially contribute to the preservation of health. The materials of the beds and furniture, the frequency of their renewal, and the modes adopted to preserve and purify them, are all worthy of attention.

The Fuel.—The nature of the fuel, and the facility of procuring it, is of the utmost consequence to all ranks of society, but especially to the poorer. It is scarcely possible to conceive how thousands of the pauper inhabitants of Ireland could protract their existence, did not the bogs amid which they pine, furnish them with the means of cooking their food, and obviating the effects of the chilling damps with which they are surrounded.

The Diet.—The quantity, the quality, and the regularity of our meals have such an obvious influence upon health, that the medical topographer should be minute in his inquiries upon these subjects. He should enumerate the species and the price of the different articles, the modes in which they are prepared or preserved, the adulterations which they undergo, and the condiments which are employed along with them. The nature of the beverages used should be investigated, and their effects when taken in moderation, or pushed to excess, should be described. The nature of the water used as an article of diet, or employed for culinary purposes, should be ascertained; and those impregnations which act directly on the kidneys, the bowels, or the skin, should be investigated, while the secondary effects which their hardness or softness may produce by their adaptation to the purposes of cookery and cleanliness should be pointed out. The abundance or scarcity of this vital article should be particularly specified. The sources from whence it flows, the materials through which it is conveyed, and in which it is preserved, the accidental pollutions which may fall into it in its course, and the facility with which it disembogues itself after having served the various purposes of life, will be important subjects of consideration. The effects of the water on strangers should be mentioned; in a great number of situations no new comers can taste the water with impunity, and the same effects are produced on their cattle. The ordinary mode in which nature appears to remove these noxious effects is by the bowels; but it will be an interesting object of inquiry to ascertain what other outlets she may employ for that purpose. The use of snow water for drink in Alpine regions has long been supposed to give rise to goitrous tumours. This mode of explaining these unseemly appearances has been questioned by some upon the principle that the disease is frequent in Sumatra, where snow or ice are never seen, and unknown in Chili and Thibet, though the rivers of these countries are chiefly supplied from melted snow; but a sufficient proof that goitre proceeds in some cases from snow or ice water is, that navigators, who were not exposed to any other of the circumstances which affect the inhabitants of the Alpine regions, yet, after having been forced to drink ice or snow water, have become affected with the disease. (See Cook's Voyages.) It will be a most interesting and legitimate object of inquiry to ascertain how far cutaneous affections depend upon the peculiar sources from which the water in ordinary use has been procured. The good or bad effects produced, or supposed to be produced, in some districts by certain articles of food long continued, should be inquired into; the use of oil is stated in some countries to predispose to hernia; beer and cyder are supposed to be productive of calculous disorders, while salted meat is, on no slight grounds, presumed to prevent them.* In some countries the most innocent articles of food are deemed injurious, and in Greece, eggs, butter, and milk, have been stigmatized as three poisons.†

The Employments.—The nature of the employment or trades of the inhabitants, the periods occupied in them, whether in close, crowded, and damp apartments, or in the open air; the metallic or other vapours, or the currents of air or water to which the workmen are exposed, and other similar circumstances, should all be most minutely particularized. To these particulars should be added the nature of the diseases produced among the artificers, the means they adopt to prevent their occurrence, and the remedies peculiarly useful in their removal.

The Amusements and Customs.—As these mark the general habits, and often in particular instances lead to disease, they are well worthy of enumeration. The topographer should notice whether they are active or sedentary, whether exercised within doors or in the open air, whether they tend to the excitement of the depressing passions or not. Even the most trivial local amusements may produce the most powerful effects on the passions and the health; a fact which will not be denied by those who recollect the effects of music in exciting the Scotch Highlander, or in producing nostalgia, and even death, in the Swiss mountaineer.

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* In tropical climates, calculus is scarcely known. On the Continent, and in Britain generally, it occurs in the public hospitals in about 1 case in 300 or 400 patients. In the cyder counties of England it is much more frequent than in many others, but in the Norfolk district, it is as frequent as 1 in 38, a proportion exceeding any thing which has been noticed in any other district of Europe. In the British army, calculous complaints are exceedingly rare, but we do not know whether any comparative estimate has been made of their frequency; in the navy, however, they are so strikingly low as 1 in 17,200. See Hutchison in Medico-Chirurgical Transactions, Vol. IX. p. 459.

† See Clarke's Travels, 8vo. Vol. III. p. 255.

The Morals—the Education—and Mode of Rearing Children.—The influence of religious instruction on the modes of living of individuals cannot escape the most unconcerned observer, and hence the general state of the morals of the district which he describes, should be an object of the medical topographer's investigation. In pursuing this he should not lose sight of the number of inhabitants which the exhortations and the example of fanatics have so constantly consigned to the mad-house and the foundling-hospital; while he will perhaps find that equal numbers have been reclaimed from the gin-shop,—another fruitful source of supply to one at least, if not to both, of these establishments. Under this head the effects of early marriages upon health seem most naturally to range themselves.

The Police of a city or district has a considerable influence upon the health of its inhabitants at all times, but in periods of public calamity from contagious disease it becomes absolutely essential to it. The subject of medical police in general is one of such extent, and comprising such a multiplicity of objects of inquiry, as to form a distinct science of itself. We shall therefore content ourselves with enumerating a few only of the principal points which appear to us to bear more directly on the subject of medical topography, and which should be minutely inquired into by all who cultivate that study. The first of these is the establishment of common sewers, without which no town can ever be either a pleasant or a healthful residence; the erection of necessaries; the pavement, cleaning, and lighting of the streets; the regulation of the slaughter-houses and markets; the removing to convenient distances burial-grounds and all manufactories productive of noxious exhalations;* the establishing a control over the admission and lodging of vagrants; the regulating the purchase and exposure of old clothes and furniture;

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* The consequences of burying in churches are now well known, perhaps the best mode ever adopted is that in use at the branch of the Hospital of Incurables of Naples, near Torre del Greco. The burial ground is divided into 365 large and deep vaults, one of which is opened every day of the year, and, after the bodies are deposited, is accurately shut. The process of putrefaction is completely finished before it is again opened. See Eustace's Italy, Vol. II. 8vo. p. 346.

the controlling the venders of spirituous liquors; the diminution, as much as possible, of the number of prostitutes, and the holding out to them, and the lower orders of society in general, encouragement to have recourse to hospitals on the first appearance of disease among them.

The State of the Poor.—Under this head should be enumerated their employments, the rate of wages, the price and nature of the food which they are able to procure for themselves, or which is supplied them, either as an equivalent for their labour or in the form of charitable donations; the rent of their cottages or rooms, the public institutions for their instruction and their support, and the friendly or other associations for their relief, &c. &c.

III.—As the ultimate aim of medical topography is to ascertain every circumstance that has an influence upon health, the nature, extent, and varieties of the diseases of the district which he undertakes to describe, are subjects of primary importance to the topographer. Under the present, as well as the other heads of inquiry, much must be left to the judgment, and much must depend upon the opportunities for observation, but the following objects appear to us indispensably necessary to be investigated.

The Endemic Diseases.—In the details on this head, the following points of inquiry should be particularly attended to. The age, sex, and constitution of those most commonly attacked; the nature of the diet, employments, or situation which renders them most liable to be affected; the popular opinions on the disease; the domestic prophylactics; the mode of cure followed by the regular practitioners in private life, and the result of hospital treatment deduced from the tables of admissions, discharges, and deaths.

The Epidemic and Sporadic Diseases.—The same subjects of inquiry should be attended to in these as in the preceding class, and the utmost caution should be observed in examining into the proofs of the contagious or non-contagious nature of the diseases of whatever species.

Hereditary or Family Diseases claim the attention of the topographer, and not only should their existence be ascertained, but any modes which may have been adopted to prevent or to cure them should be fully detailed.

The existence or frequency of *Feigned Diseases* should not be overlooked, and the details on this point should be ample, embracing the history of individuals, the particular diseases and symptoms which they have imitated, the real diseases which they have brought on, and the modes adopted for their discovery. The history of the fasting woman of Tutbury, and the steps which led to her detection, will long be remembered in the medical annals of this country. The diseases of the manufactories, the prisons, the poor-houses, and the boarding-schools, should not be forgotten, nor should those from *imitation*, which so often arise in the latter establishments, be overlooked. These diseases of imitation also often prevail in other situations, for instance the convulsive disease in Wales, Shetland, and elsewhere, and the disease known by the name of the "Louping Ague," in Angus-shire.*

Tables of Marriages, Births, Diseases and Mortality, if drawn from extensive and authentic collections of reports, become peculiarly valuable, and the greater number of points of comparison with preceding years which they furnish, the more is their value enhanced.

Epizootics.—The diseases of cattle and other animals should be inquired into, particularly when they have been very extensive and fatal. The most severe epidemics, the plague, for instance, which have afflicted man, have been preceded by similar affections of the lower orders of animated beings. The influenza, which raged in this country, and extended almost over the world in the latter end of the eighteenth century, was preceded in some places by a mortality among cats, and in others, birds were found to be peculiarly affected. The diseases of the cattle, which serve for agricultural purposes, or directly for the food of man, should be an object of particular inquiry. The health of this class of animals is peculiarly linked with that of the human species who tend and feed them, and who, in return, owe to them so much of their comfort and their support. In the epidemic which lately ravaged some of the Indian provinces, upwards of 44,000 head of cattle died in one district in the course of seven months, partly from want of food, and partly from disease. It is asserted that dysentery is produced among sheep closely pent up, and that the disease thus generated becomes contagious among these invaluable animals. The nature of the rot, to which they are subjected, is an inquiry of much importance, the more so, that in its early stages it is found that they take on fat, and are therefore in that morbid state often applied to the purposes of food. There can be no doubt that the flesh of animals who have died of disease, or who are killed when overheated by excessive labour, is highly injurious to health; and even the flesh of those who have died a natural death has occasioned sickness, and has in some instances proved fatal. *

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* See a full account of these in our 3d Vol. p. 434.

The Diseases of Plants employed as articles of food should be inquired into, as they are by them deprived of a considerable portion of their nutritive qualities, and even rendered deleterious: thus to the ergot or blight in rye, a most extensive and fatal endemial gangrene has been traced in France, and there is reason to suppose that a similar disease has been produced from blighted wheat in England.

Popular Medicine.—Under the head Endemic Diseases, we touched upon a branch of this subject, but it is worthy of being still farther enlarged upon. In many districts periodical bathings, bleedings, purgings, vomitings, diet drinks, &c. are resorted to, under the supposition that sickness in *general* is prevented by such practices, while there are other practices adopted for the prevention and cure of *particular* complaints. Rum and milk, egg and brandy, and similar disguised drams, are in high estimation in incipient cases of phthisis in some districts, and contribute to swell the number of annual victims to that scourge of our islands. The popular remedies used for the diseases of cattle and other animals should also be noticed.

Hospitals.—An account of the establishments of this description, whether for the reception of particular diseases, as fever, mania, syphilis, &c. for lying-in women, foundlings, blind, deaf and dumb, or for more general purposes, should be a very principal object of the medical topographer's inquiries. He should inform us of the site, size, and plan of the hospital, the number and accommodation of the wards, with the methods of ventilating, warming, and cleansing them; the plans for separating and classifying the patients, their numbers, and the measures pursued for obviating or checking contagious diseases among them; the materials and arrangement of their beds, bedding, and other articles of furniture; the means of collecting and conveying the sick to the hospital, with a statement of the obstacles or facilities of access to the building itself, as well as to its various apartments. We should have an account of the plan, extent, and arrangement of the kitchens, baths, and wash-houses, and of their supply of cold and hot water, and steam, together with a detail of all contrivances for the abridgment of labour; the diminution of the consumption of fuel; and the increase of the nutritive quality of the food, or its fair, regular, and comfortable distribution. Knowing, as we do, how much the individual comforts of the sick, and the general good order of an hospital, depend on the water-closets or "latrines," we should attach great importance to the description of their site, size, and actual state, the extent of their supply of water, air, and light, and the measures adopted for removing the soil, or preventing the diffusion of unpleasant and unhealthy effluvia. To all this information on the immediate accommodations for the sick, we should wish to be added an account of the storehouses and offices of every description; the airing ground for the convalescents; the places of reception for the dead, with the modes of disposing of the bodies, &c. &c. We should have also a statement of the rank, number, salaries, and duties of the various officers of the establishment, whether medical, surgical, or purveying, with an enumeration of the servants of different classes, their wages, the proportion which they bear to the sick, and the respective duties which they perform. In short, we should wish for information on every point subservient or preparatory to the grand objects of administering food, medicine, and surgical assistance. We should then be prepared for a view of the mode of carrying on the medical, surgical, pharmaceutical, and purveying duties, which would naturally lead us to the history of new or peculiar practices or operations; accounts of new remedies; details of the diet, ordinary and extraordinary, administration of wine, and other cordials, &c. The sources of revenue from which these wants are supplied should be specially enumerated, and, from all these premises, we should have no difficulty in entering into a view of the expences of the establishment. The nature of the records and annals kept at the hospital should be stated to us, and, from these, interesting information on comparative mortality, prevalence of disease, and peculiar epidemics, originating either from within or without, might be afforded; as well as satisfactory notices on every other point, medical, statistical, or financial.* The same principles of examination should be applied to prisons, lazarettos, workhouses, &c.

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* The diseases produced by the use of various animals, while out of season, as it is called, should be considered under the article "Diet."

If there are any veterinary hospital establishments, they should be described; and any peculiar practices or operations by the regular profession or quacks should be mentioned.

Spontaneous Cures.—Diseases in general have not a natural tendency to terminate in death, and some, if not interfered with, proceed spontaneously to a favourable termination. The medical topographer should investigate these cases, and should endeavour to discover how far external circumstances, which do not come under the head of medical means, may have aided the efforts of nature. This inquiry will also lead him to the investigation of the effects of the climate and situation which he describes, on diseases imported into it. The disease for which change of climate has hitherto been principally recommended in this country has been Phthisis; but there can be little, if any doubt, that many lives have been sacrificed in this way. Physicians, judging from latitude, have supposed that many situations *should* be favourable to phthisical patients, which, on trial, have proved remarkably the reverse. Many parts of the south of Europe come under this character, from the nature of their climate alone, and many others which are more fortunate in this respect, are eminently defective in all the domestic and medical comforts which are of the last importance to the recovery of the invalid. The effects of climate in accelerating the cure of syphilis, of cutaneous affections, of diseases produced from the excessive employment of mercury, and of other chronic affections, should also be an object of inquiry.

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* We have already given this outline of inquiry into the state of hospitals in our review of Dr Carter's work, Vol. XVI. p. 76, but we think it more convenient and more adapted to the purposes of the present paper to reprint than to refer to it.

The State of the Practice of Physic and Surgery, as well as that of *Empiricism*, should be noticed; the privileges or the control exerted over the members of the profession, with their divisions, numbers, &c. should be stated; as also their various institutions, libraries, societies, &c.; their peculiar doctrines and practices should be noted generally, and any thing of special interest should be particularized; the progress of *Vaccination* should be minutely inquired into. Upon the circumstances above stated, either singly or combined, will greatly depend the last and most important object of the investigations of the medical topographer, with which we shall close this class of our suggestions.

Longevity.—Not only the remarkable instances of longevity should be given, but a general view of the mortality among all ages and sexes, extended to as long a period of years as the inquirer can refer to, marking those which have been particularly affected by epidemic or contagious visitations. If the inquiries of the topographer extend over a large surface of country which comprises several districts, tables of mortality for each district should be given, otherwise a very incorrect idea may be impressed on the mind of the reader; thus, from Dr Price's calculations, there is great reason to suppose that in hilly districts, half the numbers born, live to the age of forty-seven, and that one in twenty reach so far as eighty years of age; while, in marshy districts, one only in fifty-two attain that period of life, and only one half the numbers born, survive to the age of twenty-five. There is also, as is well known, a considerable variation between the ages of persons who reside in towns and in country parishes, insomuch, that, in some instances, the difference is more than double, some cities being calculated to give a mortality of one in nineteen, and some healthy country villages being reported so low as one in forty, fifty, or even sixty, although it must be confessed that there is great reason to suppose that these estimates have been overrated, from inattention to concomitant circumstances. It is certain, however, that those employed in the Insurance of Lives estimate the longevity of a country village at fifteen, while that of the metropolis is only rated at ten and a half. *

IV.—Under the fourth head should be classed those miscellaneous topics of inquiry which more remotely bear upon the medical topography of a town, district, or country, and which could not be so conveniently arranged under any of the other heads. Peculiar circumstances will of course contribute to the enlargement of these, but the following appear the most important.

A catalogue of the works already written on the subject of the places described, whether referring to their topography, natural history, or diseases.—Notices on the subjects of the colleges, or schools for medical education, of their museums, and libraries, and of the rare and curious articles contained in them, whether preparations, books, or manuscripts.—Notices on singularities in the formation of the brute, and more especially of the human species, as dwarfs, giants, cretins, &c., and on such persons as have been remarkable for their physical powers and propensities, as strength, voracity, &c. &c.—Notices of eminent medical authors and practitioners who have flourished or live in the places described.—Notices on important and curious objects of botany, mineralogy, natural history, &c. As the excellent directions of Professor Jameson, addressed to the contributors to our College Museum, may not be in the possession of many of our readers, and as they will enable any common observer to preserve various important contributions towards the natural history of the place where he resides, or which he may accidentally visit, we shall conclude this paper with an abridged statement of them.

" *Quadrupeds and Birds.*—Quadrupeds and Birds to be preserved by taking off their skins, which may be easily done, by making an incision in a straight line, from the vent to the throat, and removing the skin by means of a blunt knife. The skull and bones of the legs and feet are to be left. The brain, eyes, and tongue, ought also to be extracted. The skin, in order that it may be preserved from decay, should be also rubbed on the inside with some one of the following compositions: 1*st*, Tanners' bark well dried and pounded, one part; burnt alum, one part; and in a hot climate one part of sulphur; to be well mixed together.—2*d*, Tanners' bark well dried and pounded, one part; tobacco, perfectly dried, one part; burnt alum, one part: add to every ounce of these ingredients one ounce of camphor, and half an ounce of sulphur. (*N.B.* No sublimate or arsenic ought to be put on the skins, as both substances destroy their texture.) These compositions to be kept for use in well corked bottles or jars.

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* Hints for an Insurance Company for Kent and Sussex, 1804, p. 7.

"Skins, when thus prepared, and partly dried, must be packed carefully in boxes, the lids of which ought to be pasted up, and in the paste used in fixing the paper, a little corrosive sublimate must be put, which prevents insects from eating through the paper.

"*Reptiles and Fishes.*—Reptiles and Fishes are best preserved in spirit of wine, rum, or whisky, some of which must be injected into the stomach, through the mouth, and into the other intestines through the anus. Before putting them into bottles, jars, or barrels, they ought to be washed clean of slimy matter. If long kept in spirits before they are sent, the spirits should be changed two or three times. The jars or bottles ought to be closed by means of sheet-lead and bladders. The larger reptiles, as crocodiles, and the larger fishes, may be preserved in the same manner as quadrupeds and birds.

"*Animal Concretions.*—Concretions of various kinds are occasionally found in the brain, lungs, heart, liver, kidneys, gall-bladder, intestines, and urinary bladder. The stomachs of many animals afford concretions of different kinds, particularly those known under the name of *bezoar stones;* and travellers inform us, that stones are met with in the eggs of the ostrich. All of these bodies are interesting and valuable to the natural historian.

"*Skeletons.*—Collectors ought not to neglect to preserve the skeletons of the different species of animals. Of man, the skull is the most interesting part, as it varies in the different races of the human species, and is also frequently singularly altered by the practices of savage tribes. The best way of cleaning bones is to expose them to the air, and allow the insects to eat off the flesh. This being done, they ought to be washed with sea-water, and afterwards freely exposed to the sun. The best skulls are obtained by putting the whole head in rum or whisky, or a strong solution of alum; and both male and female head ought if possible to be preserved.

"*Molluscous Animals,*—*Vermes and Zoophytes.*—Molluscous animals, such as cuttle-fish, the inhabitants of shells, &c. vermes or worms, and zoophytes, or animals of the coral and other allied kinds, ought all to be preserved in spirits; and in the two former classes, viz. the mollusca and vermes, the spirit of wine should be injected into the intestines, by means of a syringe, to prevent the putrefaction of the internal parts, and the consequent destruction of the organs of digestion, respiration, and of the nervous system. Many zoophytes or corals, or rather their houses, may be preserved dry; but fragments of every species ought to be put into spirits, that the real structure of the animal may be discovered.

"*Shells.*—Shells, or the coverings of molluscous animals, are anxiously sought after by the naturalist, not only on account of their great beauty, but also from their intimate connection with the various fossil species met with in rocks of different kinds. The best live shells are collected by means of a trawling-net, such as is used by fishermen, if the depths are not too great; they are also brought up by the cable in weighing anchor, the log-line, and in sounding.

"After a storm, good shells may be picked up on sea beaches or shores, as the violent agitation of the ocean in a tempest separates them from their native beds, and often casts them on the shore. Shells that have been much tossed about by the waves are of less value than fresh ones; but these, when other specimens are not to be got, ought to be carefully collected. Many interesting shells are found in rivers and lakes; and numerous species occur on the surface of the land.

"Fresh shells, or those in which the animal is still alive, ought to be thrown into hot water, the temperature of which may be gradually brought to the boiling point, by the repeated additions of hotter portions, by which means the animal will be killed. The shells are allowed to cool for two or three minutes, and then the animal is picked out.

"*Insects.*—Beetles of every kind are speedily deprived of life by putting into boiling water, which does not injure those having black, brown, or any dark colour; but those which are covered with fine down, or have brilliant colours and lustre, should not be exposed to moisture, but are easily killed, if put into a phial, and placed in a vessel of boiling water for some time. When the insects are quite motionless, such as have been in the water should be exposed to the air and sun for a day or two, until perfectly dry. In this state, they are to be placed in boxes with cotton-wool, along with camphor. Beetles may also be preserved in spirit of wine.

"Butterflies, moths, and many other tribes of insects, with delicate and tender wings, may be easily killed, by pressing the thorax or breast betwixt the finger and thumb; and it is preferable to have the wings closed, because they thus occupy less space, their colour and lustre are better preserved, and they can be expanded afterwards by the steam of hot water. Care should be taken that the antennæ or feelers and legs are not injured. A pin should be stuck through them, by means of which they are fastened to the bottom of a box lined with cork, or to one of deal, or other soft wood. Camphor ought to be put into the box.

"The arachnides or spiders are best preserved in spirits.

"In collecting insects, we use either the forceps or a net. The forceps are about ten or twelve inches in length, provided with fans of a circular or other form, and are covered with fine gauze. They are held and moved as a pair of scissars. The net is very easily made. It is of gauze, or any very fine open muslin, made upon a piece of cane of four feet long, split down the middle about the half of the length: the split part is tied together, so as to form a hoop, upon which the gauze is sewed in the form of a bag; the lower part serves as a handle, and with this, all flying insects may be very easily caught. When the insect is once within the rim of the net, by turning it on either side, its escape is completely prevented by the pressure of the gauze or muslin against the edge of the hoop.

" *Crabs.*—Crabs, lobsters, &c. may be suffocated in spirits of wine or turpentine, and then dried in an oven.

" *Crustaceous Animals.*—Sea stars, after washing in fresh water, may be extended on boards by means of pins, and when dry, laid between folds of paper, and packed in a box with a little camphor.

" In Echini or Sea Eggs, the soft internal parts are to be extracted by the anus: they are then to be stuffed with cotton, and carefully packed with tow or cotton. Particular attention should be paid to the preserving of the spines.

" *Seeds.*—In collecting seeds, it is desirable that they should be well ripened, and dried in the sun. Large quantities should never be put together, but only a few, and these well selected. They retain their vegetative powers much better if tied up in linen or cotton cloth, than in other substances; and if then packed up in small boxes, and placed in an airy part of the ship, there is every probability of their arriving in a sound state. The same remark applies to bulbous roots. Bulbs should never be put in the same box with seeds. The boxes with seeds, and with bulbs, ought never to be put into the ship's hold.

" *Dried Plants.*—The greater part of plants dry easily between leaves of books, or other paper. If there be plenty of paper, they often dry best without shifting; but if the specimens are crowded, they must be taken out frequently, and the paper dried before they are replaced. Those plants which are very tenacious of life ought to be killed by the application of a hot iron, such as is used for linen, after which they are easily dried. The collections to be carefully packed in boxes with camphor, and closed in the same manner as directed for quadrupeds and birds.

" *Minerals.*—1. Every mineral, from the most common clay or sand to the gem, ought to be collected.

" 2. Specimens of rocks, such as the granite, porphyry, limestone, &c. should, if possible, be broken from fixed rocks, and not from loose masses, which are generally decayed. In selecting the specimens, one set ought to represent the different varieties of appearance presented by the rock in the fresh state, another the rock in its different states of decomposition.

" 3. When the specimens of simple minerals, or rocks, contain crystals, they ought to be wrapped in gauze-paper, then in cotton, and afterwards in several folds of strong wrapping-paper.

"4. The specimens of rocks ought, if possible, never to be less than four inches square, and one inch in thickness, and of a square form. As soon as they have been prepared, they should be labelled, and wrapped in several folds of strong wrapping-paper. When paper cannot be procured, moss, or other soft vegetable substance, may be substituted for it.

"5. The sands of deserts, steppes, and rivers, ought to be carefully collected. The sands of rivers often contain precious stones and metals, and hence become very interesting objects to the naturalist. The sands of deserts and steppes throw much light on the nature of the surrounding country, and are much prized by the geologist.

"6. Numerous mineralized animal and vegetable remains occur imbedded in strata of different kinds; all these ought to be very carefully collected and preserved. Abundance of shells, in a fossil or petrified state, are met with in limestone; of vegetables in slate-clay, sandstone, &c.; and numerous bones, and even whole skeletons of quadrupeds, birds, amphibious animals, fishes, and even of insects, occur in rocks of various descriptions.

"7. The mineralogist ought to provide himself with hammers of various sizes. One for common use of two pounds weight; others, three, four, and six pounds weight. He ought also to provide himself with chisels of various sizes and forms, and with a set of small boring-irons. A miner's compass, small magnifying-glass, goniometer, and blowpipe, ought also to form part of his equipment. The two first are indispensably necessary for the travelling mineralogist. Nor should he neglect to provide himself with a strong bag; the form, that of a fowling-bag, lined with strong leather, covered with wax-cloth, and the outside of some durable cloth."

Our original intention in preparing this paper was, to confine ourselves to subjects connected with our own islands, but, in filling up the first outline, we found so many important queries and illustrations presenting themselves from among the phenomena observable in foreign countries, that we were unconsciously led to extend our heads of inquiry so as to make them applicable to these also. In truth, the same causes of disease exist in all countries more or less, while their effects are proportionally elicited by circumstances peculiar to each. That physician who has studied the influences of external circumstances on the human constitution in one situation, cannot, therefore, be long or greatly at a loss to detect them in another, and thus observations made under the burning sun of the Indies may materially assist the investigation of the origin of disease in the less fervid temperature of northern climes. The invitation which we have already held out to the practitioners of the British Islands, we now extend to those of our more distant colonies, and we shall feel happy to afford insertion either to their answers or their inquiries in the future numbers of this Journal.

H.

II.

On the Distinction between Soul and Mind. By GEORGE NESSE HILL, Esq. Surgeon, Chester. In Reply to the Review of Mr LAWRENCE's *Lectures on Physiology*, inserted in this Journal, Vol. XV. p. 599.

ARROGANCE and presumption, I hope, form no part of my character. If such be your opinion, you will feel no objection to insert some observations upon the doctrine (if so it may be called) of Materialism, as stated by Mr Lawrence, and very ably examined in your number for October. As friends to liberal discussion, and, what is still of higher import, as the advocates of truth, I feel assured that your candour will admit occasional remarks, although they may not exactly accord with your own.

I have no intention of attempting to defend doctrines in which I have no belief; nor if I did coincide with Mr Lawrence, does that highly gifted anatomist stand in need of such a defender. I gratefully acknowledge the obligation I owe both to you and the learned lecturer, for having canvassed a subject in which every human being is interested. Every person whose attempts to serve his fellow men have been misconstrued, will feel it incumbent upon him to avail himself of every feasible opportunity of explanation, by illustrating his meaning, where obscurity appears to have misled his readers.

Arduous as the attempt appears to break a lance with the veteran editors of a long established and highly valuable Journal, yet I venture, confident of their forgiveness, when they view the motive with that liberality they bestow on every subject.

Mr Lawrence is charged with having committed a great error, an error "unphilosophical in its nature, and dangerous in its tendency." (Journal, p. 599.) This error appears to me to be contained in the following statement: "The same kinds of facts, the same reasoning, the same sort of evidence altogether, which shew digestion to be a function of the alimentary canal, nutrition of the muscles, the various secretions of the respective glands, prove that sensation, impression, judgment, thought, in a word, all the manifestations called mental or *intellectual*, are the animal functions of their appropriate apparatus, the central organ of the nervous system." (Lect. p. 104.) Now I humbly conceive, that had this paragraph closed at the word "*mental*," the whole doctrine and all the subsequent reasoning would have been incontrovertible; but the finest understanding occasionally lapses into error, and "o'ersteps the modesty of nature," whence arises the propensity to confound what little we seem to know, with that which, it is quite clear, we do not know. By attempting too much, truth becomes more closely veiled. Such seems to me to be the case with the sequel of all Mr Lawrence's reasoning, from being erected upon a misconceived basis.

Free promulgation of discordant opinions is the surest road to truth. In this point of view the world is as much indebted to Mr Lawrence, as it is to the editors for so luminous a communication of their sentiments, notwithstanding the former talks and writes about a nonentity, viz. an immortal "or immaterial mind," p. 107. That the materials destined to form the future mind are as regularly created, and *ultimately* evolved, as the component parts of any other moving machine, will scarcely be denied by the most strenuous advocate *(or acutely sensitive immaterialist)* for the doctrine of the homogeneity of the soul and mind, a doctrine which the more carefully it is examined by unprejudiced minds, the less will it appear consonant with the facts daily presented to observation, during the several states of the original formation, the growth, the acme, the health, the disease, the decline, and the death of the human body. The phenomena presented by these successionary states all tend to prove that the mental faculties are not the intellectual, or, in other words, that Matter is not Spirit.

To young and unsophisticated minds, undebauched by false metaphysical speculations, mystery is ever a great stumbling-block; therefore, all the data upon which sound reasoning is to be founded, should be rendered as clear and comprehensible as possible. It is, I humbly conceive, erecting a false one to advance, that the intellectual part of man and his mental faculties are one and the same. It is absurd, dangerous, and *immoral*, to advance that the soul is the effect of, or produced by, material organization, and perishes with the body. How clear and emphatic is the distinction made in the holy writ: "Thou shalt love the Lord thy God with all thy soul, with all thy heart, with all thy mind, and with all thy strength!" how simply beautiful, how correctly conformable to truth is this arrangement! The question of Mr Lawrence, "Where is the mind of the fœtus?" is by no means difficult to answer. When he calls it the intellectual soul, he *advances* from the plain path of truth into the regions of absurdity, and it is then only that his doctrines savour of materialism,—the sin never to be forgiven, because calculated to produce so much mischief especially on the minds of the rising generation.

In considering the origin, nature, and progress of the most afflicting of diseases, insanity, I do not recollect that I have any where been guilty of using the words deranged soul; but notwithstanding all the offence I have given to the strenuous believers in the intellectuality of the mind, nothing has yet been said, not even by the zealous writers of the Eclectic Review, to disprove that mind is not the result of corporeal organization, and that the spirit or immortal soul is not an emanation from divinity itself, consequently independent of all influence from matter, which both health and disease prove the mind is not.

I shall not however indulge myself at the expence of my readers' time, in endeavouring to support here what I have advanced in the "Essay on Insanity," but only observe, that nothing has occurred since it was published, to convince me of its incorrectness in this most momentous distinction, a distinction which, so far from loosening the bonds of morality, or producing any one of the consequences so sincerely deprecated by every pious mind, tends most decidedly to illuminate and confirm the truth of our holy religion, and to strengthen the convictions of well-ordered society. Facts crowd upon facts to prove the soundness of these assertions, and the salutary effect of acting upon this reasoning in the cure of insanity is daily illustrated.

Permit me then, gentlemen, to indulge myself in making a few remarks upon the learned criticism on the belief of the able lecturer: "Thought (says he) is a function of matter." Are we arrived at a complete knowledge of all the functions of matter? Was it not possible for Him who formed all things to give to matter functions, far beyond our powers of comprehension? Do we doubt that the sun is matter? so is a clod of earth, but what analogy can we discover between them? and what know we of the constituent particles of the grand luminary? Can matter act upon spirit? That matter can act upon mind is incontrovertibly true, or insanity would never be cured; but who will boldly attempt to prove that the immortal soul can be diseased, and can be acted upon by medicinal agents? What then becomes of the stigma of reproach, daily attached to the degradatory epithet of Materialist? Or who will have the hardihood to deny that He who formed the most wonderful and complex organ with which we are acquainted, could not endow it with the powers of thinking as the result of such organization, and confer upon it the high and important office of a medium between the perishable body and the imperishable soul? Is it not incumbent upon us (on all metaphysical subjects at least) to make due distinctions between the comprehensible and the incomprehensible? The true nature and affections of the human mind, I humbly conceive to belong to the former; the exact nature of the union between body and soul to the latter. True, as the learned critic observes, "we examine the various glands, and we find in the ducts connected with each of them a portion of that fluid which is its appropriate secretion;" but has this step advanced us another? Has it taught us, or shall we ever know the exact process by which the bile or the saliva is formed from the blood? We behold the apparatus for the secretion of these fluids, as we see the brain the apparatus of thought, as Mr Lawrence *so far justly* conceives; but do we know any more of the actual secretion of bile, &c. than we do of the formation, the growth, the improvement, the derangement, the decay, and final extinction of mind? A man was brought into the London hospital, who had just received a wound of a salivary gland. It was near dinner time. He ate a hearty meal, during which exercise, a napkin folded nine times, and applied over the wounded organ, was wetted through by saliva formed *instanter*, fully as speedily as we can conceive to be the formation of thought.

That thought is a function of matter, whether viewed "physiologically, theologically, or metaphysically, is said to be the sum and substance of materialism;" but this is not proving by even the shadow of an argument, that the intellectual principle is thought, or *e contra*, which would indeed be "rank materialism."

"Upon the principles of materialism, there can be neither morals nor moral responsibility." (Journal, p. 607.) Granted, if mind and soul were homogeneous, but who will prove their homogeneity? "In all these workings of a mighty mind there is —there must be something immortal." (Ibid. p. 611.) But does it of necessity follow that this something must be mind? Our ignorance of the most common natural operations is every hour demonstrated; who then shall arrogantly aver that he can bring to the proof the immateriality of mind? that he will shew it is the "spark divine," the imperishable intellect?

Are brutes of the higher order destitute of mind? yet who, in the present day of daring *averment* and *inductive* philosophy, will say they have immortal souls? Instinct is merely an appellation indicative of a limited portion of mind, only a few grades below that of man, as man is of a higher order of beings.

That the office of the brain has nothing whatever to do with immateriality, appears to me as clearly true as that the heart, the liver, or any other viscus, has not. To those who have made some progress in developing what is termed mental derangement, it is no less clear that the brain is the seat of thought, than that the heart is the fount of the circulation. Will the impugners of this doctrine say, that sensation is not the effect of impression,—that perception is not the result,—and the latter, the source of memory, the foundation of all the phenomena of mind, which we find is as intimately connected with the brain, as secretion is with the glands, and as inexplicable; yet no one will pretend that thought is a secretion. The materials of thinking are brought to the brain by the external senses, as certainly and as constantly as the materials for the formation of bile are brought to the liver. Are not these facts? yet can we, by any process, detect the constituents of bile in the blood, or in an healthy liver, any more than we can thought in the brain? Are we perfectly acquainted with the divisibility of matter, or will the eye ever behold the odoriferous particle which impresses the olfactory nerves? Although the cause of insanity is always corporeal, it is neither the soul nor the body which is insane, but the mind, through the medium of the body; and this is manifest by the operations of consciousness, that principle of the soul which informs us of the mental disturbance and derangement,—the mind not possessing the mysterious faculty of consciousness of its own operations.

Whilst the human mind is considered as the result of organization, the division of the zoophytes is explainable and consistent with common sense, but inexplicable and inconsistent, when the mind and the soul are considered as one and the same, as the learned editors truly aver, "whatever is divisible is matter," and well might they add, "the subject is too absurd to enlarge upon;" for truly it is so by those who voluntarily and unnecessarily deal in incomprehensible mystery, such as that of considering mind and soul, the material and the immaterial, to be one and the same. Considering the soul as an immaterial principle, united to the mental faculty during animal life, in a way indiscernible to us, and at its extinction returning to its divine origin, can never be rationally considered as "perverting physiology to the support of scepticism." (Journal.) Farther say our worthy journalists, "We are conscious of a power within us which reasons," &c. True, and whence this consciousness? assuredly from an immaterial principle, so connected with a thinking faculty, as to inform us of its powers of reasoning correctly or incorrectly, and of the effects of all the passions to which it is subjected from the unceasing operation of exciting causes, proved, as said above, by a lunatic being at intervals perfectly conscious of the perverted state of his mind; but conceding that the mind in health is actually conscious of its own operations, is it not absurd to say it is so during the existence of a maniacal paroxysm?

To say that thought possesses extension, solidity, and all the properties of gross matter, is decidedly absurd; but it is somewhat more than absurdity to say, that He who formed the brain could not endow it with the power of producing thought, and connecting with it an immaterial principle to survive the "wreck of worlds." It may be to the minds of some reasoners preposterous to say that "matter thinks," but to *mine* it is a species of the highest impiety to say it might not be the cause of thought. The fundamental principle which the veteran editors hold to be incontrovertible, is undeniably so with their views of the human mind being the intellectual and spiritual faculty, but upon what I humbly conceive to be a more correct view, it is erroneous. Thinking may be the effect of a certain but unexplainable combination of matter, which cannot be produced by the very same agents uncombined. "Many remarkable properties are superadded to organized matter." (Journal.) Then, why not the remarkable property of thought? Was the great fabricator of the brain incapable of thus endowing the beautiful organ? Thought then is the result of organization, but mind is not the immortal soul, the "*breath of life.*"

The very "beast that perisheth" is endowed with the mental faculty, by whatever epithet proud man may choose to designate it; but who, in our day of information, will say the beaver has an immortal soul? "When the beaver is undisturbed by man, he is a perfect example of almost every virtue; he is a pattern of conjugal fidelity and paternal care,—laborious, thrifty, frugal, honest, watchful," &c. "The beaver is never known to make depredations upon his weaker neighbours. In forming their habitations, dams of water, &c. no human ingenuity could improve their labours." (Sansum, on the habits, *morals*, manners, &c. of Beavers.) Such then is *mind* without *soul.*

"Thought is not a sensation;" true, but where is the thought independent of sensation? The bell is the indirect source of sound upon the application of an exciting cause, but it is not sound. Have not idiots and chronic lunatics souls? but who says they have minds? Would not a brainular concussion abolish the mind of the beaver as it does in man? The idiot and the lunatic then have imperfect, mutilated, or diseased souls, just as is that of the beaver who has no soul. Who sees not the folly of this reasoning?

So far is the human mind from "owning no dependence upon material impression," that I ask, what is it without the continued influence of material agents? Of the exact nature of the connection between the incorporeal spirit and the corporeal mind, we know nothing; but it is no presumption to ask, where were the operative powers of the mental soul in Father Mabillon, for twenty years during his idiotism, from an injury done to his *soul* through the medium of his brain, and then became a rational being again from a surgical operation? Could there be a more striking proof of the dependence of mind upon healthy organization; and is this "part of the divinity within us" equally dependant? It must be, if they are one and the same. Thought then is the effect of sensation, as much as any other thing is the effect of a combination of causes, without which, we find that thing cannot exist, but the soul must be as independent of corporeal agency as it is imperishable. What is immortal must be independent of disease or of accident, but is the mind so? Numerous quotations are given the readers of the Journal, to prove that mental faculty is compatible with an almost entire destruction of the brain; but the argument recoils on itself, as an equal, if not a far greater number of instances might be adduced to show, how instantaneously every mental faculty has been suppressed, or totally extinguished, by a rupture of an artery, not visible to the unassisted eye, by a few particles of pus, by a few grains of osseous deposition, or the sudden accumulation of a few ounces of water. Nay, from the mere concussion produced by a moderate blow, when the eye and knife even of a Home have failed to discover the slightest breach of visceral integrity in the brain, can such accidental causes reduce the *soul* to fatuity, or exalt it into agonizing pain and ultimate frenzy? Can the immortal spirit be laid prostrate at the foot of corporeal disease? be elevated into more than "giant's strength," by a febrile or maniacal paroxysm? be depressed below the emmet's power by an hæmorrhage? be wholly subdued by an apoplexy, or annihilated *pro tempore* by a brainular collapse? But it is asked, "Where does thought reside?" It is as pertinent and reasonable to ask, "Where does the immortal soul reside?" It is said we can have "no conception" of any analogy between the functions of the brain, as the seat of mind, and any other of the visceral functions. How many phenomena are daily presenting themselves to us, of which "no clear conception" can be had, and yet of which no one doubts the existence? Our want of a clear "conception" of a thing will never prove its non-existence.

Laying a stress on the well known difficulties in comprehending how the brain receives, retains, and reproduces ideas, does not diminish, much less explain one of them. The boundary which we cannot pass, but to which we are allowed to advance, is now tolerably well understood. We are compelled to own that the horse receives, retains, and experiences, the revival of the knowledge of the stable where he has only once in his life been well fed.

But the whole human body is renovated in seven years; consequently, it is absurd, if mind be a corporeal function, to say that the mind of 1819 is the same mind as that of 1812. In what does the new matter continually deposited as the old particles are removed, differ from the latter? Are not all animals subject to similar changes?—yet who doubts the continuance and identity of the mental functions of the elephant, when ten or fifteen times seven years have revolved over his head? If the successionary particles of the body did not possess all the properties of those which preceded them, the work of the great Creator would have been imperfect, as is manifest without farther comment. Suffice it to add, that all reasoners who attempt to prove that the mind is the soul, are compelled to adopt a similar plan to that to which the acute journalists have resorted.

A decided, unsophisticated materialist, then, is he who confounds mental with intellectual function,—an unfounded inexplicable dogma, a gross error, rendering every thing dark and obscure; while, on the other hand, by adopting the contrary path, and ceasing to puzzle ourselves with attempting to explain the nature of that which never can be cognizant to human sense, we rationally foster the ray of light given us, and may thereby discover the operations of consciousness upon the mental functions.

Will any sober philosophic reasoner say, that insanity is an intellectual disease? Is it the immortal soul, destined to survive the "wreck of worlds," that is out of tune? Can medicinal agents restore the perturbed spirit emanating from the divinity to harmony? But of the effects of these agents on mental functions, it would be an abuse of time to expatiate.

To deny the immortality of the soul, is impiously presumptuous, as well as highly absurd. It is only one degree less so to argue on the spiritual nature of mind. It is conceded that the manifestations of mind are the result of "particular arrangement of matter," and why not the human mind? Is there more difficulty in believing the one than the other? But it is said, animal instinct is measured out like a given quantum of muscular power; it is not human reason, it is bound down to a prescribed limit, beyond which no change of circumstances will permit it to pass. This is not true. "A species of scarabeus was hastily engaged in making for the reception of its egg a pellet of dung, which, when formed, it rolled to the top of a small hillock, and repeatedly suffered to tumble down its side, apparently for the sake of consolidating it by the earth which each time adhered to it. During this process, the pellet unluckily fell into an adjoining hole, out of which all the efforts of the beetle to extricate it were in vain. After several ineffectual trials, the insect repaired to an adjoining heap of dung, and soon returned with three of his companions. All four now applied their united strength to the pellet, and at length succeeded in pushing it out, which being done, the three assistant beetles left the spot and returned to their own quarters." (Kirby and Spence's Introduction to Entomology, Vol. I. p. 526.) On the subject of the perceptive faculty, memory, &c. of animals and insects, see p. 503 et 528 of the same work. In what then consists the difference between the faculties of these inferior beings, "the poor beetle which we tread upon" and proud man, but that the latter possesses an immortal soul, formed to unite with the mental faculty, in placing man so high in the scale of being "the image of his Maker," and "a little lower than the angels?" It may be added, without tautology, that if mind be soul, what an endless variety of souls exist? say between a Cretin of the Valais and Newton. It surely is an argument against fact, to say that "we find no organ that performs a double function." Such an assertion must have been hastily made, or the twofold office of the male organs of generation forgotten. Nor does this view of the most important of subjects derogate from the soundest religious or moral principles, but confirms and stablishes them on "the Rock of ages," in "minds thus fitted for the discovery and reception of truth,"—affording at all times, and under all circumstances, freedom from perplexing conjectures, embarrassing doubts, and ensuring perfect satisfaction and tranquil repose. It does, indeed, appear to my bounded comprehension, a gross absurdity to say that the "quickening spirit" can suffer a state of irritability, which can be removed by a dish of strong infusion of coffee; be rendered imbecile by the abuse of that charming dietetic beverage; tranquillized by a well-timed dose of opium; roused from stupor by a cordial stimulant, or depressed by a drastic cathartic. Yet to all these influences is Mr Lawrence's "mighty mind" subject,—which brainular function, the learned editors have used the most potent arguments to exalt into the "imperishable soul."

Lastly, in addition to the crowd of proofs already advanced of the distinction between soul and mind, it is only necessary to add a word on the phenomena of recovery from a fit of complete syncope or profound sleep. The subject is first informed by the faculty of the soul, termed consciousness that he still exists, not by memory, that most important of mere mental functions, for it has been so completely suspended by the state of body on which it is wholly dependant, as to be often a considerable time in resuming its function of recalling the knowledge of time, place, situation, and surrounding circumstances, with which the subject was only a few minutes before so familiarly acquainted, mind resuming its functions rapidly, or otherwise proportionally, as the brain recovers from a state of collapse. In my apprehension, it is unphilosophical to elect an intricate path to travel in, when one freed from almost every difficulty presents itself to our choice; for this, in my opinion, is the true state of the case, between those who argue in support of the homogeneity of the soul and mind.

Such are the sentiments which have been charged with obtruding and advancing the tenets of "gross materialism," but it is a groundless charge, demanding the seizure of every opportunity for refutation, more especially by every writer, whose attempts to serve mankind have been heedlessly misconstrued, or wilfully perverted from their true intent and meaning. In confirmation of the correctness of the ideas here advanced, the sentiments of numbers of the best writers of this age might be quoted in their support; a reference to one only of the most able shall suffice, viz. Armstrong on Puerperal Fever, p. 4. "The secretion of milk was nearly suspended soon after the attack; the breasts became flaccid, and the mother, so lately all solicitude about her child, now seldom inquired after it." So truly is the state of mind dependent upon the state of body, and the intellectual faculty independent as it is immortal.

Chester, 1*st February*, 1820.

Note by the Editors.—On a former occasion, we felt ourselves imperiously called upon to attempt some observations on this important subject, and we then stated the difficulty which hangs over one part of it, arising from the manifestations in certain animals, resembling the phenomena of mind. We cannot admit that this has any very important relation to the great question, or weakens, in any degree, the argument for an immaterial and immortal principle in man. But still it has ever been felt as a difficulty in the investigation, and various doctrines have been proposed by ingenious men in regard to it. Some have considered it as of so little importance in the argument, that they have appeared to give it up. "This argument (says Baxter) doth not prove the activity of the brute soul when separated; though, if any one could prove it, he would do no disservice perhaps to philosophy." Others contend for various orders of immaterial principles, and that we have no reason to suppose that they should all be immortal. A third doctrine is that contended for by our ingenious correspondent, in the distinction which he proposes betwixt mind and soul. We do not think this doctrine is tenable, but we do not mean to enter upon the discussion. We merely state, what indeed must be obvious to every one, that it differs essentially from the flimsy materialism of the French school, against which we raised our feeble voice.

III.

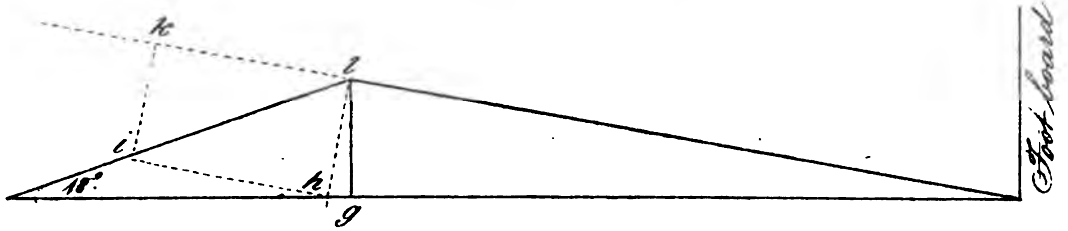
On the Application of the double inclined Plane for the Treatment of Fractures of the Lower Extremities. By Benjamin Granger, Surgeon. *(With an Engraving.)*

Suppose the femur fractured, and the limb laid over a double inclined plane, with the two planes placed at an obtuse angle, as represented by the figure No. 1; What resistance can the leg give to the descent of the pelvis? This is a question which requires to be decided, both in relation to the utility of the machine, and the method of applying it. The received opinion is, that the leg so completely supports the pelvis, that when the limb is merely put upon the machine, no descent of the pelvis can take place, farther than the elongation of the muscles of the thigh would permit, or the purpose of their continued extension require. Thus Mr Charles Bell directs the limb to be merely laid upon the machine; observing, that "if the thigh-board be much longer than the femur, the muscles of the thigh will be *strained.*" He farther observes, that the "weight of the body" is by the action of the machine "made to counterpoise the strength of the muscles, and to prevent their contraction." To ease the muscles "of the thigh," he says, "we must raise the hip, by placing a thin cushion under it—to *stretch* them, we must take the clothes from under the hip, or make the pad under the knee-joint larger." "To counteract the *dragging* of the muscles" incident to cases of fractured neck of the femur, his words are, "I know nothing more effectual than laying the limb on the frame already described. I do not imagine that any splints about the thigh or joint, or any kind of bandaging, will be more effectual to retain the limb in its natural position." (Principles of Surgery, Vol. I. p. 197.) In the ninth volume of your Journal, a correspondent advises the thigh plane to be longer than the thigh, that "the breech may not reach completely the bed, but *have its weight supported by the upper part of the leg* laid over the farther inclined plane." (p. 333.) The directions given by Mr Astley Cooper, in his valuable Surgical Essays, for the application of the MACHINE in fractures of the thigh, are, to all intents and purposes, the same as those just mentioned. It is taken for granted that the leg becomes fixed, when placed on the frame; at least that the foot only requires to be supported to prevent its rotation outwards. To attend to

Plan of double inclined plane for fractured Thigh.

Fig. II.

Plan of double inclined plane for fractured Leg.



Drawn by A. Forrester .. Printed from Stone by C. Rathbun

the question—Suppose the tuberosity of the ischium at *a*—the os calcis at *e*—and the upper head of the tibia resting on the summit point of the two planes *b*, and projecting some little beyond that point. Call the leg, a lever—the point *b*, the fulcrum—the projection of the head of the tibia beyond *b*, the lever of the power—and the arm *b e*, the lever of resistance.* Observe that the line *b h* is perpendicular, and the line *b a* (the thigh plane) oblique to the lever. Now, when a force acts obliquely on the arm of a lever, it is resolvable into two forces; one acting in the line of direction of the arm of the lever, and the other in a direction perpendicular to the arm. Let the diagonal *b c*, of parallelogram *b k i h*, represent the force of gravity of the "pelvis," † independent of the support of the bed; for the question *at present* is, not what is the resistance of the bed, but of the leg to the descent of the pelvis? The one resistance must, to facilitate the investigation, be considered separately and abstractedly from the other. The diagonal *b i*, being then the representative of the whole force of gravity of the pelvis, the line *b h* is the representative of the perpendicular, and the line *b k* of the parallel force; for these two forces are equivalent to the force *b i*. The effect of the force *b h* can cause only rotatory or angular motion of the lever *about* the fulcrum *b*; and the effect of the force *b k*, on the other hand, can cause only rectilinear motion of the lever, by drawing it *off* the fulcrum towards *k*, on the line of direction of the plane *b k*; in other words, the mechanical power of a lever is opposed to the force *b h*, and the mechanical power of an inclined plane to the force *b k*. The consequence is, that the resistance to the force *b k* is *less* than the weight of the leg, and the resistance to the force *b h* is many times *greater* than the weight of the leg. As to the latter resistance—suppose the distance from *b* to *e* 18½ inches, (the usual length of the leg,) then the line *b d* (the perpendicular to the line of direction of the force *d f* from the centre of motion *b*, and therefore the length of the efficient lever of resistance) may be estimated at 17 inches long. Suppose the actual length of the lever of the power to be one quarter of an inch, and the weight of the foot half a pound—the foot alone would counterpoise a weight of 34 pounds, acting perpendicularly on the extremity of the lever of the power, or in the direction *b h*. It would therefore be needless to proceed to prove that the resistance from the *whole weight of the lever* of resistance to the force *b h* is complete. This portion *b h* of the whole force of gravity of the pelvis, therefore, being annulled or destroyed, as it were, by the action of the lever of resistance, is incapable of causing any descent of the pelvis.

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* The smallness of the scale of the plan No. 1, does not admit of the lever of the power being represented on the line where it is supposed to be placed.

† The term "pelvis" is meant to denote the thigh and that portion of the trunk gravitating on the plane *b a*—it is used in this sense for the convenience of brevity of expression.

As to the resistance to the force *b k*—it is *less* than the weight of the leg. This is an obvious effect of the inclined plane. The respective gravity of the leg, which constitutes the resistance, is rather less than one-third of the weight of the leg; because the length of the plane is somewhat more than three times its perpendicular height. However, in the same time that the tuberosity of the ischium descends from *a* to *r*, the upper head of the tibia moves from *b* to *r*, or nearly twice the space. This, therefore, nearly doubles the resistance of the leg to the force *b k*. Allowing the resistance to be increased half as much more by the effect of friction, the amount of the whole resistance of the leg to the force *b k*, will, at most, be five-sixths of its weight. The resistance then, which the leg gives to the descent of the pelvis is somewhat short of its weight; and this is the decision of the question proposed. Now the weight of the "*pelvis*" so much exceeds the weight of the leg, that it may safely be admitted, without the trouble of calculation, that the force *b k* of the whole force *b i* will overpower the resistance —consequently that the leg of itself cannot prevent the descent of the pelvis.

It follows from these premises, that the amount of the resistance which the contractile power of the muscles of the thigh has to overcome, is not to be reckoned by the weight of the pelvis, but of the leg; and that, were the resistance from the weight of the leg equal to the contractile power of the muscles, as the pelvis is not supported by the leg, the bed will yield—the pelvis will descend—the thigh will recede from the plane—and the displacement of the fracture must evidently be the result of such change of position of the limb.

To obtain the advantages of the machine in cases of fractured thigh, therefore, the securing of the limb from any change of position is clearly an object of primary importance. The leg must be prevented from ascending the frame by making, as it were, *the heel a fixed point*. To obtain this object, let the inclined plane for the leg extend three or four inches beyond the heel—let the perpendicular board *c s* be added to the machine; this board, notched on each side, should be less broad and somewhat longer than the foot—let the middle of a belt be applied behind the ankle just above the os calcis—let each extremity of this belt be crossed over the instep, and conveyed round the foot-board to be fastened. The belt may be made of linen cloth, stuffed with cotton, and tape should be attached to each end for the convenience of tying. By means of this belt almost any degree of extension can be obtained. It also most effectually prevents the foot from rolling outwards. The splints are to be applied to the thigh in the usual manner. But should the fracture be of the neck of the femur, a long splint is then required. Mr Astley Cooper gives the following directions for the application of the long splint: "When the limb has been extended on the machine, a long splint is to be placed upon the outer side of the thigh, to reach above the trochanter major, and to the upper part of this is fixed a strong leather strap, which buckles around the pelvis, so as to press one portion of the bone upon the other, and the lower part of the splint is to be fixed with a strap around the knee to prevent its position being moved." (Surgical Essays, Part II. p. 50.) Perhaps in every case of fractured thigh, without distinction, the long splint should be employed, because the pelvis is apt to move inwards, and occasion angular displacement of the fracture. To prevent this inconvenience, I have found it necessary to confine the thigh close to the pegs on the outside of the frame, by encircling it with bands of linen cloth, and tying the ends of the pegs betwixt the plane and the horizontal board, and the pegs should always be made long enough to pass through the horizontal board to increase the support which they give to the limb. Should the long splint be preferred, the fractured limb must be *separated from the other.* Unless this circumstance be attended to, a firm splint could not be applied on a line with ilium and on a line with the thigh, without the patient inclining the trunk towards the side on which the fracture is situated, and thus lying in a crooked posture. I have to conclude these observations on the application of the double inclined plane, by recommending the summit of the two planes to be rounded off, so as to be adapted to the shape of the ham. A circular piece, too, should be cut away from the bottom part of the leg plane, that the heel may be received in the opening; which otherwise is liable to become painful from continued pressure. The heel, however, may be raised at any time a little from the board by tying the belt which secures the foot a notch or two higher.

The double inclined plane, I believe, was originally invented purely as a contrivance to keep the limb in that easy state of flexion as advised by Pott, with the view of relaxing the muscles. For this purpose, the elevation of the planes need not be so great as to render any fixing of the limb to the machine ne-lever from the plane to the horizontal line *b d.* The lever of resistance then becomes longer, and the lever of the power shorter; therefore the extent of elevation of the leg from the plane is limited to the line *b d.* By the second figure it will be perceived, that not only the force of gravity would be materially less on a machine of this form than on one of the form represented by figure No. 1.; but that a very small portion of the force has any tendency to act upon the leg as a lever, or to elevate it from the inclined plane.

Burton upon Trent, July 20, 1820.

IV.

Account of several Cases of Secondary Small-Pox, which have recently occurred in the Military Hospitals of Edinburgh Castle. By Samuel Hill, Member of the Royal College of Surgeons, London, and Assistant Surgeon to the Forces in North Britain. Addressed to Dr Hennen, Deputy-Inspector of Hospitals, and communicated by him to Dr Duncan, Junior, Joint Professor of the Theory of Medicine in the University of Edinburgh.

Sir,—Agreeably to your request, I proceed to give you a short history of the cases of small-pox which have lately occurred under my observation in the Detachment Hospital at Queensberry House and in Edinburgh Castle.

These cases appear to me to be interesting, not only on account of the great diversity of appearances which the disease exhibited in the different persons attacked by it, but also from the circumstance of its proving fatal to one individual, who had previously passed through the natural small-pox.

I remain your's faithfully,
Edinburgh, 3d Nov. 1820. Samuel Hill.
To Dr Hennen,
Deputy-Inspector of Hospitals, Edinburgh.

Case I.—James Carson, æt. 17 years, recruit of the East India Company's service. Unvaccinated. A few days after having been enlisted, had a pass to see his friends, and, on the 4th February, the fifth day of his return, admitted into the Depot Hospital, Queensberry

House, with fever, accompanied by the appearance of several small-pox pustules on both his hands. He had been several days ill of fever, which, at the time of admission, was severe. During three days the eruption continued to come out very numerously on the face, which was swollen, accompanied by sore throat. In the progress of the disease, the eyelids were tumid and closed, and pustules coalesced on the face and hands. There was a considerable difficulty in deglutition, accompanied by increased secretion of saliva. The fever abated on the second, and subsided on the third day of the eruption, which blackened on the face by the eighth, and on the body and upper extremities on the tenth day.

The scabs continued to separate for several days, leaving behind deep depressions and blains of the cutis. On the twenty-eighth day from admission, he was dismissed.

This was a case exhibiting the character of distinct small-pox.

A sister of the patient, who was unprotected, visited him during the time he was in the hospital, and soon after was attacked with the disease, which she communicated to another sister in the country, to whom it is said to have proved fatal.

CASE II.—JAMES MITCHELL, 92d regiment, æt. 18 years. Vaccinated. Was admitted into the Detachment Hospital, Queensberry House, 29th March 1820, with what were considered to be the symptoms of pneumonia, and an appearance of some vesicles, similar to those of vesicular itch. For the pneumonic symptoms he was largely bled, and took purgative medicines, which were followed by considerable mitigation of them. Two days after, he experienced a fresh attack of fever, without any other of the usual symptoms of inflammation of the lungs. The same evening, an eruption, very numerous on the face, made its appearance on the body, which, in the course of two days, first became vesicular, and afterwards pustular. About this time, the face was flushed and swollen, and the throat became sore, accompanied by difficulty of deglutition, and increased secretion of saliva. These symptoms for three days were much increased, and attended with a considerable degree of fever, which subsided on the fourth day of the eruption, which, by the sixth day, began to blacken on the face and forehead, forming, in some parts, thin dark horny scabs, and in others thin flat crusts, which, on falling off, left behind slight tubercular elevations of the cutis and blains.

The period of blackening and scabbing of the eruption on the extremities was two days later than on the face, where the elevations of the cutis were in greater proportion than were observed to be on the body or extremities. On the fourteenth day of eruption dismissed the hospital.

CASE III.—JOHN FALCONER, 26th regiment, æt. 19 years, having a distinct cicatrix from the process of vaccination visible on the left arm, experienced a smart attack of fever about the 23d April. This was succeeded by the appearance of a vesicular eruption on the

26th, which continued to come out till the 1st May, when it appeared in its various stages, from that of vesicles with limpid contents, others containing a milk like fluid, and some dry, covered by a small thin dark scab. The scabs continued to form for three or four days, and then fell off, leaving behind them neither depressions nor blains.

Case IV.—Miss S—— æt. 16 years, who had been vaccinated in Sicily, at about the age of six months, and a distinct cicatrix from that process visible on the left arm, was attacked with severe fever on the 16th July. On the 17th she was bled, and some saline opening medicine given her, under the belief that it was an attack of simple fever. The symptoms, however, underwent no remission until the 18th, when a papular eruption shewed itself on her face, forehead, neck, and arms. This in some parts was surrounded by an erythematous areola of some extent, and in others more exposed; the papulæ were unaccompanied by any inflamed margin. The fever with its concomitant symptoms now underwent a marked remission, and she only complained of a sense of giddiness and weakness when in the erect position. The papulæ continued to come out in successive patches for three days, while those which had first appeared, became in that time, first vesicular, and afterwards pustular. The pustules began to blacken on the face on the sixth day, while those on the body and extremities were two days later in undergoing the same change. The pustules formed at first their horny scabs, which in falling off left behind them tubercular elevations and blains.

Case V.—Master J. S—— æt. 14 years, brother of the foregoing, vaccinated at 12 months old in Ireland, and having a distinct cicatrix visible on both arms, was taken ill 17th July, with giddiness, nausea, pain at the epigastrium and bowels, with slight fever. These symptoms, with little variation, continued till the 23d, when a few vesicles unpreceded by papulæ, about twenty in number, containing a limpid fluid, made their appearance on his face, neck, breast, and arms. These vesicles were small and conoidal, surrounded by a slightly inflamed areola. Their contents gradually acquired a turbid milky appearance, and in four days began to harden into thin scabs, which speedily fell off, leaving the cuticle smooth and even, but slightly red in the places which they had occupied.

There was nothing in the appearance of this eruption which could enable the observer to distinguish it from a well-marked example of chicken-pox, though there was no reason to believe that he had been exposed to any other contagion than that of small-pox.

Case VI.—Mr S——, eldest brother of the foregoing, æt. 18 years, had been vaccinated at nine months old, a distinct mark of which was visible on the right arm; was seized with fever on the 1st of August, followed on the evening of the 2d by an eruption on the body, which continued to come out for four days, during which time there appeared to be very little remission of the febrile symptoms; the nausea and pain at the epigastrium experienced were described to be most distressing. The eruption in this case followed a similar course, and presented the same appearances as that in the case of his sister, from which there was little or no difference to be observed.

CASE VII.—ROSE COGHILL, recruit 79th regiment, æt. 17 years.—Though bearing on his face, and other parts of his body, about fifty distinct marks, similar to those left by small-pox, yet as he could give no distinct or satisfactory information of his having passed through that disease, was vaccinated on June 15th in each arm.

The vaccination passed through its different stages in a regular manner.

On the ninth day of vaccination was attacked with fever, which continued severe for three days, when it was succeeded by a very thick eruption over the body, but most numerous on the face and forehead. In the course of four days this eruption became first vesicular and afterwards pustular, accompanied by flushing and swelling of the face, and soreness of the throat.

The latter symptoms continued severe for three days, when the pustules on the face began to blacken, and those on the body and extremities followed the same course two days afterwards. The scabs continued to fall off for near a week, leaving behind them tubercular elevations of the cutis.

This patient was dismissed the hospital on the 18th day of the eruption.

Can the regular progress of the vaccine vesicle in this case be considered as a decisive proof, that the marks mentioned as existing at the time vaccination was performed, had not been occasioned by small-pox? And if not, on the supposition of these marks having been occasioned by previous small-pox, are we to ascribe the mildness of the last variolous eruption, partly to the effect of the former small-pox, and partly to that of vaccination?

CASE VIII.—MURDOCH FERGUSON, recruit 79th regiment, æt.—Unvaccinated. Was attacked with severe fever on the 8th July 1820, which continued for four days, when it was followed by a remission, on the eruption of some papulæ over the body, which proved to be that of small-pox, and in all its circumstances exhibited an exact resemblance to that noticed in the last case.

It deserves to be mentioned, that this patient, as well as the recruit Coghill, was examined at the Castle, to ascertain if he had previously been subjected to vaccination, or passed through small-pox; about fifty marks, similar to those existing in Coghill, were visible on his face and body, and he stated that he had been told by his mother, he had in his infancy passed through the small-pox. This statement, corroborated by the appearances on his body, being deemed satisfactory, he was not subjected to vaccination.

Is the horn-pock form of the disease in this case to be considered as a modification, occasioned by his having previously passed through small-pox?

Case IX.—Jane Johnstone, 4th Royal Veteran Battalion, æt. 27, was attacked on the 27th July with fever, the symptoms of which were very severe, and lasted for six days, and during that period was bled three times, and took saline purgatives and diaphoretic medicines. The fever was succeeded by a very thick papular eruption on the face and body, which continued to come out for three days, when the febrile symptoms abated. In three days more the eruption became first vesicular, and afterwards pustular, the pustules of which were large and flat, with central depressions. They were coherent on the face and forehead, which was flushed and swollen, accompanied by severe pain in the throat, difficulty of deglutition, and increased secretion of saliva. By the ninth day of the eruption, all the symptoms were increased in severity, and the eyelids were so much swollen as to occasion blindness. She was now attacked with a considerable degree of fever, which continued severe until the eleventh day of the eruption, and was accompanied at night by slight delirium.

The pustules began to blacken on the face on the 11th, when the secondary fever abated; those on the body and extremities were some days later in undergoing the same process. The scabs which were formed, on falling off left behind them large depressions and blains on the face, but many of those on the extremities were succeeded by slight tubercular elevations of the cutis.

The blains were visible forty days from the first appearance of the eruption, and the depressions were to be seen several months after, during the time she remained in the Castle.

This woman stated, that, while living at Leicester, in 1811, she remembers she had been affected with small-pox, which she caught naturally, a great number of distinct marks of which were visible on the body, and a few on different parts of her face. She also stated that the eruption remained out nine days before it began to blacken, and many of the pocks on her arms and body were large and flat.

Her husband (a soldier 4th Veteran Battalion) stated also, that he recollected the circumstance of her having passed through the disease, and under this conviction, she had been frequently since exposed to the contagion of small-pox, without entertaining the slightest apprehension of again becoming affected with it.

In this case, no mark of modification could be perceived in the eruption with which she was last affected, though there does not seem any reason whatsoever to doubt, that she had previously passed through the natural small-pox.

Case X.—Jane Fowler, æt. 15 months, was attacked with fever on the 1st September, attended by convulsions, which returned frequently, and continued more or less violent until the 3d; when a papular eruption appeared over the whole body, but was most numerous on the face.

Towards the evening of this day, the eruption seemed to go back, when the convulsions which had in some degree subsided on the appearance of the eruption, returned in a violent manner, and continued during that night. On the morning of the 4th, the eruption reappeared, and at the same time the convulsions and fever went off.

In three days the eruption became vesicular, confluent, of an ash colour, with central depressions, and having all the characters of malignant water-pox. The face was at this time much swollen, the eyelids tumid and closed, and the child seemed to suffer much pain and difficulty of deglutition.

These symptoms continued increasing until the 9th, when secondary fever, accompanied by a puffy swelling of the hands and arms, difficult respiration, great restlessness, and a small rapid pulse, supervened, and proved fatal on the eleventh day.

This infant, while in the barracks at Dundee, some days after having frequent intercourse with a child residing in the town of Dundee, during the time it was affected with malignant water-pox, of which it died, was attacked, in the month of February last, with a varioloid eruption, preceded by fever and sickness of three days duration. That eruption, as described by its mother, was at first papular, and afterwards became pustular. The pustules, which were numerous, and accompanied by swelling of the face, did not begin to blacken before the ninth day. The scabs, on falling off, left behind them a considerable number of depressions and blains of the cutis on the face and body, the latter of which were distinctly visible at the time this infant was attacked with the small-pox of which she died.

Five other *unvaccinated* children, living in the same barrack room with Fowler's child, were successively attacked by a varioloid eruption; which, though from the description given of it, seemed to have been of a milder form than that in Fowler, left behind it more or fewer depressions of the cutis in them all.

CASE XI.—MARY LANGTHORN, æt. 12 months, one of the five children mentioned as having been affected with the varioloid disease at Dundee, was on the 15th August attacked with sever fever, accompanied by slight convulsions and coma; which symptoms continued more or less violent for three days, when a papular eruption appeared over the body, and was followed by a mitigation of the febrile and other symptoms. The eruption continued to come out in a papular form for three days, and these papulæ became first vesicular, and afterwards pustular. The vesicles and pustules had central depressions, and were surrounded by an erythematous areola.

On the face, the pustules were in some parts coherent, and in others of the body and extremities they coalesced. They continued increasing in size, accompanied by swelling of the face and eyelids, with closure of the latter. These symptoms continued till the ninth day of the eruption, when secondary fever supervened.

On the tenth day, the pustules began to blacken on the face, while those on the body and extremities did not blacken till the twelfth day. In many parts of the face, where the pustules had been scratched, they were covered with thick yellow crusts, but in other parts of the face and extremities, where they were allowed to remain undisturbed, they terminated in thin horny scabs; which, after falling off, left behind them depressions and blains, the latter of which were visible on the fortieth day of eruption.

This child, and others who had passed through the varioloid disease at Dundee, were examined at the Castle, in order to ascertain if they had been vaccinated or passed through small-pox; and as the accounts given of the disease with which they had been affected, corroborated by the appearance of the marks on each, seemed satisfactory proofs that it had proceeded from the variolous infection of malignant water-pox, from the child who died at Dundee, communicated first to Fowler's, and subsequently from it to other children in the same barrack-room; it was judged unnecessary to subject them to vaccination.

It is proper to state why this had not been done at Dundee; and it appears, that the corps to which the individual belonged, at that time being newly formed, and changes in its distribution taking place, were obstacles to its easy accomplishment.

Case XII.—On the 3d August 1820, Mary Baskin, aged 14 months, was inoculated in both arms with lymph taken from a vesicle of Mrs Pringle's child, in Jamaica Street, which had been vesicular from its commencement. On the 4th, the punctures were slightly inflamed, but by the fifth day after the insertion of the lymph, inflammation had disappeared.

On the 16th, the 14th day from the insertion of the lymph, a small vesicle appeared on the right arm in the spot where this had been performed, surrounded by a bright areola of the size of sixpence. A minute papula also appeared the same day on the opposite arm, where the lymph had been inserted, without being surrounded by any inflamed margin. The child had been for a day and night, preceding these appearances, feverish and sick, and was during that time unusually fractious and uneasy. On the 15th day, the vesicle on the right arm was somewhat larger and flat, the areola more faint than the preceding day; the papula on the left arm seemed on the decline.

The vesicle became pustular and slightly depressed in the centre on the 16th day. The areola was more vivid than on the preceding day. The papula on the left arm had lost its redness, but was still elevated.

On the 17th day, the pustule was larger and more prominent. The areola seemed on the decline. Papula on the left arm not altered since the preceding day.

The pustule had begun to blacken on the 18th day. The papula was slightly elevated, but of the same colour as the surrounding skin.

22d day. The scab which had formed on the right arm fell off, leaving behind it a slight depression and discoloration of the cutis. The left arm exhibited no mark of where the papula had been situated. During all this time, no eruption whatever was perceptible on any part of the body.

On the 5th of September following, this child experienced a fresh attack of fever, accompanied by vomiting and slight coma, of three days duration, when a few small hard acuminated papulæ made their appearance on the body, and one or two of the same description on the face, followed by a relief of the febrile symptoms. The papulæ continued to come out for three days, though few in number, when some of them became vesicular, and a few had central depressions, others not. Those which had come out at a later period became also in the course of two days vesicular, a few coalescing on the face and hands.

On the sixth day of the eruption, the vesicles became pustular, they gradually filled, and began to blacken on the face on the eighth day, and to form thin horny scabs on the tenth; when those on the extremities began to blacken on the 12th; some of the scabs, on falling off, left behind them slight depressions of the cutis.

CASE XIII.—JAMES PRINGLE, ætat. 12 months, Jamaica Street, No. 23, vaccinated nine months ago.

On Sunday the 31st July was seized with febrile symptoms, and on the evening of the following day two pure vesicles were observed on the left forehead.

Tuesday, 1st August.—A roseolous rash appeared on the neck, which, in the course of two hours, extended from thence over the whole surface of the body. This rash was followed in the evening by several pure vesicles on different parts of the body. These vesicles seemed to be formed by a layer only of the cuticle, they were so thin and transparent. On letting out with a lancet the fluid which they contained, a slight elevation was perceptible to the feel around their margins.

Wednesday, 2d August.—Several more vesicles have appeared; those which came out yesterday are still purely vesicular; the two vesicles which appeared on the forehead on Monday have assumed a milky colour; roseolous rash still apparent.

Thursday, 3d August.—A few more vesicles have appeared. Several of those which came out on the two preceding days have now become slightly turbid, the rest remaining purely vesicular; the roseolous rash has entirely disappeared, except from around the individual vesicles, where there is a slight erythematous blush.

Friday, 4th August.—A few more of the vesicles have assumed the milky appearance; the master pocks, which have been scratched, have irregular scabs on their surface; the contents of a few of those on the abdomen and upper part of the thigh, which have likewise been scratched, have now assumed a more distinctly purulent appearance, and the erythematous blush with which they were surrounded has now put on the appearance of erysipelatous inflammation.

Sunday, 6th August, seventh day of eruption.—Several of the vesicles on different parts of the body have begun to scab, while others are still of a semitransparent colour. The fever, with which the child was more or less affected during the last five days, seemed to have entirely left it.

Monday, 7th August.—Many of the vesicles are entirely scabbed over, some of them with distinctly horny, and others with irregular dark-brown scabs; those which are not yet entirely scabbed over have minute scabs on their surface, with milky matter underneath.

CASE XIV.—MARGARET PRINGLE, ætat. 14 years, vaccinated when three months old.

About two years after vaccination, had a severe attack of what was called chicken-pox, which was at the time prevalent in Rose Street, and which have left cicatrices much more like those of natural small-pox than of chicken-pox.

About three months ago, after having been exposed to the contagion of natural small-pox, was a second time severely affected with chicken-pox, which the medical attendant said resembled very much natural small-pox, both in its general appearance and in the length of time that elapsed between the appearance of the eruption and the time of its decay, and between this and the falling off of the scabs.

The attack of chicken-pox, which has left numerous small pits in parts of the skin, was ushered in by severe febrile symptoms, accompanied with delirium. The roseolous rash likewise came out before the general appearance of the eruption.

The girl had an attack of scarlatina about two months previous to the second occurrence of chicken-pox.

August 7, 1820.

CASE XV.—LOUISA M'GRIGOR, æt. 15 months, Jamaica Street, No. 23, vaccinated about ten months ago, has been affected with hooping-cough for two weeks past.

On Monday, 31st July, was observed to be rather heavy and feverish; and, on Thursday the 3d August, a pure vesicle was discovered on the back of the left hand, and another on the upper part of the left thigh.

Friday, 5th August.—Several more distinct vesicles have appeared on different parts of the body.

Sunday, August 6th.—Several of the vesicles, which have been scratched, are slightly purulent, and surrounded with an inflammatory circle, while the remainder are still purely vesicular.

Monday, August 7th.—The whole of the vesicles have assumed a milky appearance, and have begun to blacken, except the one which appeared first on the back of the left hand, which is still almost purely vesicular, with a minute scab on its surface.

The eyes have been considerably affected, probably owing to the hooping-cough.

CASE XVI.—LACHLAN M'GRIGOR, æt. three years, vaccinated about two years ago, has had hooping-cough for about ten days.

On Thursday, 3d August, became feverish; and, on Sunday the

6th, a few small vesicles appeared on different parts of the body, unattended by any apparent surrounding inflammation.

Monday, August 7th.—A few more vesicles have appeared; several of those which came out yesterday have subsided, leaving scarcely any perceptible mark behind, except a minute elevation, while others are purely vesicular.

From the different circumstances and forms under which the variolous disease was observed to exist in the patients whose cases have been detailed, it appears to me, that they may not be improperly arranged in the following manner:

Previous State of Constitution.	*No. of Cases.*	*Form in which the Disease Appeared.*
Unprotected,	1	Distinct small-pox. Case 1.
Protected by previous vaccination,	5	Modified and mild small-pox. Cases 2, 3, 4, 5, 6.
Supposed to have been protected by having passed previously through small-pox,	5	Two of whom had the subsequent disease in a severe manner, in the form of horn-pock. Cases 7, 8. Three in whom the subsequent disease was unmodified, severe, attended by secondary fever, which was fatal in one on 11th day. Cases 9, 10, 11.
Unprotected; but was inoculated with lymph from a vesicle of supposed chicken-pox,	1	In whom the disease was in the mildest form of modified small-pox, after having suffered from local and constitutional symptoms from the inoculation of varicella. Case 12.

It is seen from the histories, that the disease, in the five cases modified by vaccination, assumed two distinct forms, namely, that of horn-pock, and that of varicella, though there was no reason to believe that these two forms of the disease could have had separate origins. The two cases which assumed the form of varicella occurred at different places and periods, in situations surrounded by individuals labouring under small-pox in its other various forms.

Of the five cases where the individuals were supposed to have been protected by having previously passed through an eruptive disease, considered to have been small-pox, the history of it, furnished by two, was not so precise in its nature as could have been wished; but the cicatrices on the bodies and faces of these patients, were obviously of the number and form similar to those which are not unfrequently left by that disease; and as these persons were, during the last attack, seen by many professional gentlemen, and by some more than once, among whom were yourself, Dr Duncan junior, Dr Burton, and several others, who all concurred in the opinion, that the marks left by the former eruption were those of genuine small-pox, my belief in the truth of that supposition was strengthened. With respect to the facts and circumstances connected with the histories of the first attacks of the eruptive disease in the remaining three of this class of patients, I think that the proofs are so strong as to leave no doubt in the mind of every candid reader, that they were in all those of genuine small-pox.

The history of the foregoing twelve cases, and the circumstances connected with several of them, appear to me to be curious and interesting on many accounts.

Firstly, The proportionably more frequent occurrence of secondary attacks of small-pox within the last twelve months than appears to have taken place in the earlier period of the epidemic. For, besides the cases I have detailed, I have had the opportunity of observing other five cases in which a second attack of small-pox had taken place, whose histories are well authenticated, three of which, I believe, were seen by yourself; but, as they have occurred in the practice of other gentlemen, I do not conceive myself at liberty to take any more particular notice of them. What surprises me is, that I should have seen so many cases of secondary small-pox in a period so short as that in which I have been stationed in Edinburgh, while I do not recollect ever having noticed a single example of this occurrence in the observation of several variolous epidemics during the fifteen years I have been engaged in practice.

Secondly, The very great proportion of secondary cases occurring among so small a number of individuals; for, calculating only on those which are well authenticated, it is as one to four; but if the others (which are only doubtful from being deficient of the testimony of the individuals themselves) be admitted, it will be increased to more than one in three.

Thirdly, The unmodified form, the secondary form, and unusual severity of the symptoms which accompanied the disease in those who, there was no reason to doubt, had previously passed through small-pox, and the circumstance of its proving fatal in one who had obviously done so.

Fourthly, The greater comparative mildness of the disease observed in those who had been previously vaccinated; in three only of whom the eruptive fever appeared to be severe, but of short duration.

Fifthly, The occurrence of two examples of the disease under the form of varicella, where the individuals had lived in the same apartments with those affected with small-pox, and to which source of infection the disease could be distinctly traced.

Sixthly, The disease occurring in a mild and modified form in an infant, who had been inoculated thirty-three days before, with lymph taken from a vesicle considered to be that of pure varicella, and who, fourteen days after the inoculation, was affected with local and constitutional symptoms from the vesicle produced by the inoculation, which in one arm assumed a pustular character, though no eruption whatever appeared in any other part of the body.

And *lastly*, On account of the disease said to be varicella, in the child from whom the lymph was taken, having been satisfactorily traced to the infection of modified small-pox, from a house in the same street, directly opposite to that in which this child lived, where a girl of 14 years of age passed through the disease in a modified form, having, as it is supposed, caught the infection at school.

I am indebted to my friend, Mr M'Intosh, for the history of this, and three other cases of a similar nature, which occurred at No. 23, Jamaica Street, (vide Cases 13, 14, 15, 16,) from the first of which the lymph was taken for the purpose of inoculating the child above noticed; and I am informed by Mr M'Intosh, there had been much and frequent previous intercourse between the inhabitants of the two opposite houses.

V.

Observations on Ischuria Renalis. By JOHN ABERCROMBIE, M. D.

BETWIXT the urinary secretion and various other functions of the body there exists a connection which presents some remarkable phenomena. The minute relation of these phenomena will probably ever elude our researches; but, in a practical point of view, they open a most interesting subject of investigation. The inquiry is twofold: (1.) The manner in which the secretion of urine is affected by disorders of other functions. (2.) The effects which morbid conditions of this secretion produce upon the system in general. In endeavouring to contribute something to this important and interesting inquiry, I submit a few observations on the true Ischuria renalis, or suspension of the secretion of urine.

Morgagni is said to have been the first who distinguished Ischuria into four species: renalis, ureterica, vesicalis, and urethralis; the two latter being the common cases of retention from disease of the bladder or urethra, and the second retention in the pelvis of the kidneys from obstruction of the ureters. The first is an affection of a different nature; a morbid condition of the secreting organ itself, by which the secretion is completely suspended. It is a disease of so rare occurrence, that neither Morgagni nor Valsalva had ever an opportunity of examining the body of a patient who died of it, and very few examples of it are to be found in writers of more recent date. If the cases, therefore, which I mean to describe, shall be considered as genuine examples of this remarkable affection, they are probably worthy of being recorded; and the remarks which I shall offer in connection with them, I merely propose as a slight outline, to be corrected by future observation.

The disease seems, in general, to come on suddenly; and, at its commencement, there is usually some complaint of pain, which varies considerably both in its seat and its severity. It is sometimes referred to the region of both kidneys, sometimes to one side, and sometimes extends through the abdomen, like the pain of cholic. It is in some cases a dull uneasiness, rather than actual pain. There is frequently, but not always, vomiting; the pulse is in some cases frequent,—in others natural. The peculiar symptom is a sudden diminution of the secretion of urine, which soon amounts to a complete suspension of it. The affection is probably at first considered as retention; but the catheter being employed, the bladder is found to be empty. This leading symptom then continues; the others vary; there being in some cases continued pain, in others the pain ceasing. Vomiting may occur at various periods, and there is sometimes a peculiar feeling of extreme sickness and exhaustion, which at first is apt to convey the impression of sinking, but which is often found not to be of this nature, by being accompanied by a full firm pulse. With these, and some other varieties, the symptoms now go on for several days; after which, the patient generally begins to talk a little incoherently, and shews a tendency to stupor. This increases gradually to perfect coma, which in a few days more is fatal, death being sometimes preceded by convulsion; and, in some cases, convulsion has been suddenly fatal, with very little coma. The periods of the disease vary considerably; but in general, I think, the occurrence of coma may be expected about the fourth or fifth day from the time when the secretion of urine became completely suspended.

On dissection, there is usually found effusion in the brain, though sometimes it is in small quantity. I have not observed it to have urinous qualities, as it has been said to exhibit in some cases; but this curious point remains to be investigated. The appearances in other organs vary considerably, and are frequently obscure and unsatisfactory. In some cases, there is reason to believe that the original disease was an inflammatory action in the kidneys themselves, or in one of them; but in others, no morbid appearance can be detected there. It seems probable that the disease may be excited by inflammation seated in the neighbourhood of the kidneys, as in the peritonæum, perhaps in the spleen or its covering, and sometimes in the liver. In a case by Schenckius, in which the disease supervened upon a blow on the loins, there was an abscess among the internal muscles; in one by Lælius a Fonte, the left kidney was found black; and, in several cases by Hildanus and Bonetus, there were extensive marks of inflammation in the kidneys and neighbouring parts. In Case I. of this paper, there was a remarkable appearance of inflammation and gangrene in the adipose substance behind the left kidney. In this case, also, the liver was distinctly affected, which is perhaps a circumstance worthy of some attention. Cases of jaundice have been observed which terminated unexpectedly by coma, while the jaundice was quite recent, and no symptom had been taken notice of which seemed to indicate danger. I do not know that these cases were allied to the disease which is the subject of these observations, but there are some grounds for supposing that they were, and the subject is worthy of particular investigation.—In a case by Scroeckius, fatal by coma in 17 days, the left kidney was found diminished to the size of a small egg, and of cartilaginous hardness, and the blood-vessels belonging to it were obliterated. Nothing is mentioned of the right kidney, except that it was much enlarged. The disease seems also to arise from calculi, or quantities of sand filling the pelvis of the kidney; and in Case IV. it arose from calculi obstructing both ureters. This case, indeed, may be considered as properly an example of ischuria ureterica; but the secretion must have been suspended at an early period, as appears from the small quantity of urine that was found in the pelvis of the kidneys; for in some other cases, in which the ureters were obstructed, the pelvis has been found enormously distended or ruptured. A remarkable circumstance in the history of the disease is, that it seems in some cases to arise from a cause affecting one kidney, the other being quite healthy.

The causes of the disease, in its idiopathic form, are not well ascertained: it is frequently referred to cold, especially to cold applied when the body is much heated. I have reason to believe that it may supervene upon gonorrhœa, especially when the discharge has been suddenly checked by improper treatment.

The prognosis is in general unfavourable, and the fatal termination is usually by coma. This may be dreaded when the suspension of urine has continued four or five days; but in a case described by Dr Laing, in Vol. X. of this Journal, there was a complete suspension of the secretion for nine days, and yet the case terminated favourably; the urine, after that interval, beginning to flow, and soon returning to the healthy condition. On the other hand, in Case II. of this paper, coma appeared about the fifth day from the suspension of the secretion, and was fatal, though the urine was secreted in its full quantity for two days before death. In a case described by Dr Home * there were dropsical symptoms. This does not seem to be a common occurrence, though *a priori* we should expect it to be so. Some other cases, again, have been suddenly fatal by convulsion, without continued coma.

The most singular circumstance in the pathology of the disease, is its tendency to terminate by coma and effusion in the brain. The minute connection here will probably ever elude our researches, but in a practical view it is of great importance, and presents a most interesting subject of investigation. There have been various observations, or perhaps conjectures, in regard to the influence of the urinary secretion upon the functions of the brain, and the effect of diuretics in preventing or relieving certain affections of that organ. They were long ago supposed to prevent or diminish the effects of intoxicating liquors, and, by writers of eminence, they have been recommended in epilepsy and mania.† Whatever importance we may attach to this suggestion, I believe that the connection pointed at by these observations, is worthy of some attention in affections of the brain.

On the other hand, it is an important fact to be kept in mind in this inquiry, that cases have occurred, in which the secretion of urine was completely suspended for a considerable time, without being followed by any affection of the brain, and sometimes without the occurrence of any urgent symptom. In some of these cases, copious perspirations occurred, or other vicarious discharges, but in others, no such discharges took place. Dr Parr mentions a case in which the secretion was suspended for six weeks, and there was no vicarious evacuation, except a copious perspiration for a day or two; medicine seemed to give no relief, and the secretion at last gradually returned. In the Biblioth. Med. for 1815, a case is related, in which the secretion was suspended for several months; it proved fatal by gradual exhaustion without any urgent symptoms. On dissection, the omentum was found soft as if decomposed; the kidneys were imbedded in masses of a fatty looking substance, which had the hardness of scirrhus; the kidneys themselves had a cartilaginous firmness; the pelvis of both was filled by calculi, the left contained four, and the right but one, which exactly filled it. M. Nysten has described several cases in which suppression of urine was succeeded by copious vomiting of a fluid, in which, he says, he detected urea, uric acid, and the other ingredients of urine.* Similar cases are related by Pechlin, Valisneri, and others, and in a young man mentioned in the Upsal Transactions, the saliva is said to have exhibited urinous properties for four days, while he was affected with suppression of urine.

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* Home's Clinical Experiments, p. 288.

† See Portal, Cours d'Anatomie Médicale, Tom. V.

EXAMPLES OF THE DISEASE.

CASE I.—A man aged 39, in the night of 14th January 1817, was seized with vomiting and pain in the back, stretching round the abdomen; he made water frequently, but without pain. On the 15th, had pain and occasional vomiting, but was not confined to bed, and was not seen by any medical person; made water frequently.

16th. Was seen by a surgeon, who found him with an exhausted look; pulse feeble, and below the natural standard; frequent vomiting; bowels costive; passed no urine.

17th and 18th. Less appearance of exhaustion; pulse natural; bowels moved by purgatives; no urine; occasional vomiting and hiccup; pain abated. On the 18th, a degree of jaundice appeared.

19th. (I saw him for the first time.) Frequent vomiting and hiccup; jaundice; pulse 72, and of good strength; bowels open; an evident tendency to coma; no urine; the catheter passed easily, and brought off about ℥i. A full bleeding was employed, which he bore well, and the blood was very buffy. He was then treated by purgatives; blistering; various diuretics; turpentine by the mouth and by glyster, &c.

20th. No vomiting since the bleeding; incessant hiccup; pulse natural; no urine; appearance rather improved; and at night a small quantity of urine was brought off by the catheter.

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* Nysten, Recherches de Physiologie et de Chimie Pathologiques.

21st. No vomiting; less hiccup; pulse natural; coma increased; bowels open; about ℥vi. of urine by the catheter.

22d. Pulse 84; hiccup and coma increased; ℥vi. of urine by the catheter; jaundice continued; died in the night.

Dissection.—The liver along the upper and outer part of the right lobe was very soft and broken down. The lower part of the right lobe of the lungs was very dark coloured and soft, and adhered to the diaphragm. The kidneys were a little redder in the colour than usual; the ureters and bladder were healthy. The principal seat of disease seemed to have been the adipose substance behind the left kidney; at this place there were extensive marks of inflammation, and a part was quite black.

In this remarkable case there seemed to have been inflammatory action affecting various organs, but it did not appear to have affected the kidneys. The disease in the adipose substance behind the kidney is a singular affection, which has been observed in other cases, though without the symptoms which occurred in this case. A lady aged 30, after violent exercise, and being much heated, sat for some time in a current of air. In the evening she had pain in the bowels and vomiting. Next day she took a purgative, and at night felt much relieved. In the night she had pain in the back, with much restlessness, anxiety, and coldness, sunk rapidly, and died next day. The urinary secretion had been natural. On dissection there were marks of inflammation in the pancreas, and on the colon where it lies over the left kidney. The whole of the adipose substance surrounding both kidneys was in a gangrenous state, exhibiting a large mass of black pulpy matter, and there were slight traces of inflammation in the internal structure of both kidneys.*

Case II.—A young man aged 19, (18th Nov. 1812,) had urgent vomiting; appearance of extreme exhaustion; pulse 84 and weak; some pain across the back; no other complaint of pain; abdomen soft and rather collapsed; no urine for three days; and bladder found empty by the catheter. Complaints began on the 15th with vomiting, frequent and copious diarrhœa and pain over the abdomen. The diarrhœa was removed by opium; the vomiting had continued, with his pulse from 80 to 90. Bowels freely moved by injection on the 17th; was treated by cordials; warm bath; opiates; diuretics; blistering, &c. his state of exhaustion admitting of no active remedies.

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* Trans. of the Coll. of Physicians of London, Vol. IV. p. 226.

19th. Pulse 86 and small; skin cold; constant vomiting; little pain; no urine; much hardened feces brought off by injection.

20th. Vomiting abated; less exhaustion; pulse 90; no urine; much oppression, with a tendency to coma.

21st. Pulse 72; appearance of exhaustion quite removed, but coma increasing; bowels open; urine brought off by the catheter at different times through the day, to the amount of about the natural quantity.

22d. Pulse 84, of good strength; coma much increased; lbiss. of urine by the catheter; died in the night after slight convulsion.

Dissection.—Slight effusion in the cranium; and increased vascularity of the brain; a portion of the ileum 6 or 8 inches in extent, at its lower extremity, was gangrenous. Both kidneys were of a brighter colour than usual, showing some marks of inflammation. On the surface of both there were several dark spots; and in the substance of the left there was a small quantity of purulent matter; other viscera healthy.

Case III.—A lady, aged about 60, in April 1820, was affected with pain in the left side about the margin of the ribs, which was deep-seated, and was much increased by a full inspiration; pulse frequent; other functions little impaired. Was treated by an eminent practitioner with repeated bleeding, blistering, &c.; and with various remissions and aggravations, the complaint went on for five or six days, without showing any symptom calculated to excite alarm. On the 2d day, the pain and fever were much abated. On the 3d and 4th days, she had frequent bilious vomiting. On the 5th day, the pain returned, so as to require a repetition of the bleeding; the vomiting after this period occurring occasionally, though with less severity. From an early period of the disease the urine had been very scanty, and about the 5th day the secretion ceased. I saw her on the 7th day; she then complained of extreme oppression, and a feeling of exhaustion; the face was pale, and the eyes dull, but the pulse was about 84, and rather full; pain continued in the left side, affected by a full inspiration, but the breathing in other respects was natural; no cough; bowels open; no urine, and the bladder empty.

8th. No change; no urine; pulse natural; pain continued.

9th. Falling into coma; no urine.

10th. Coma increased; no urine; died at night. No dissection could be obtained.

A man, aged 35, mentioned by Dr Home, had cold shivering, cough, and scanty urine, afterwards dropsical symptoms, pain in the back, and right side, thirst, impaired appetite, and some vomiting. After three weeks, when he was received into the clinical ward, the vomiting and cough had ceased, and he was affected with headache, some anasarca, pain in the region of the kidneys, and suppression of urine; and the catheter being used, no urine was discovered in the bladder. He became comatose, and died in 5 days, the anasarcous swellings having greatly diminished before his death;—the vomiting had returned, with diarrhœa. On dissection, the lower part of the right kidney was considerably inflamed, and there was inflammation of the pylorus, part of the duodenum, and a considerable part of the small intestine. There was effusion in the abdomen, the pleura, and the pericardium, and about ʒij in the brain.*

These may be considered as examples of the true Ischuria Renalis. The following, though of a different nature, is nearly allied to it.

Case IV.—A gentleman, aged 70, in the night betwixt 21st and 22d February 1816, was seized with pain in his belly and sides, like colic pains, and found that he could pass no urine.

22d. Pains much abated; made no complaint of any uneasiness; pulse natural; no urine; bladder found empty.

23d. A good night; pulse natural; no urine.

24th. Was up and dressed, and walking about his house; pulse and appetite natural; complained of nothing except when closely questioned, some slight uneasiness in the back, scarcely amounting to pain; no urine; catheter repeatedly used and bladder found empty.

25th, 26th. Continued in the same state; was in his usual health, except that there was no urine.

27th. Began to show slight confusion of thought, and some hesitation of speech, and complained of giddiness; pulse rather frequent.

28th. Was confined to bed, but seemed relieved; pulse natural; no urine.

29th. Became comatose.

March 1st. Profound coma; bladder empty; died on the 2d. Repeated bleeding, purging, various diuretics, &c. had been employed. The blood showed a strong buffy coat.

Dissection.—The bladder contained no urine, but there were found in it three calculi, weighing each about ʒiiss. The pelvis of both kidneys contained a small quantity of urine, and numerous small calculi, mixed with a quantity of sand. The ureter of the right side was completely obstructed about 3 inches below the kidney, by a rough dark-coloured calculus, about ¾ of an inch in length, and 1 inch in circumference. In the left kidney, besides the numerous small calculi already mentioned, there was a smooth white calculus, about 1½ inch long, and $1\frac{6}{10}$ in circumference, and distinguished into two portions by a deep furrow which went nearly round it. Of these portions, the larger was contained in the pelvis of the kidney,

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* Home's Clinical Experiments, p. 288.

and the smaller in the commencement of the ureter, where it was firmly grasped, so as completely to obstruct the passage of the urine into the ureter. There was considerable effusion in the ventricles of the brain; other viscera sound.

This is properly to be considered as a case of ischuria ureterica, and there are several on record similar to it. In one described by Tulpius, there was no urine passed for eighteen days. The patient suffered severe pain in the loins, with fever and vomiting, and died comatose and convulsed. The left kidney was enlarged and livid, and contained many calculi, the largest of which had insinuated itself by its smaller extremity into the commencement of the ureter, so as completely to obstruct it. The right ureter also was obstructed by a calculus sticking in it at its commencement; "Quæ duo obstacula, (says Tulpius,) conspicue omnibus ostensa, vindicarunt artem ab ignominia."* A gentleman, mentioned by Dr Clarke, had pain in the region of the kidneys, and in the left side of the abdomen, with vomiting, fever, and suppression of urine, the bladder being found empty. He died comatose on the eighth day. Both kidneys contained sand and small stones, and both ureters were obstructed about the middle, by calculi the size of horse beans. † A more singular case is described by Mr Balderston, in which there was a suppression of urine, that continued almost total for fifteen days, the case then terminating by convulsion. The right kidney was of a monstrous size, and contained a large stone, many smaller ones, and some purulent matter. The left kidney was so small that it was found with difficulty, and neither in it, nor the ureter connected with it, was there any trace either of calculi or sand. ‡

In a girl aged 8, who died on the seventh day, Cnoffelius found the right kidney so encrusted with calcareous matter, that there seemed to be no passage into the pelvis of it; the left kidney was sound, but the ureter of that side was completely filled up and distended with red sandy matter. In this case it is probable that the left kidney only had been performing its office for some time, and that the fatal attack had arisen from the more recent obstruction of the left ureter.

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* Tulpii, Obs. Med. Lib. II. Caput 45.
† Edin. Med. Commentaries, Vol. VI. (1779,) p. 204.
‡ Edinburgh Medical Essays, Vol. II. p. 308.

TREATMENT.

The proper Ischuria renalis is in general to be considered as an inflammatory affection, and is to be treated according to the circumstances of the particular case by bloodletting, large blisters, warm bath, mild diuretics, especially digitalis given in pretty full doses at short intervals, and perhaps sudorifics. I am doubtful of the effect of turpentine, either by the mouth or by injection; probably in an acute case the tobacco injection might be useful. It would probably be calculated to relieve the inflammatory state of the parts, and might promote the descent of calculi, if the affection proceeded from the presence of them in the ureters. In Dr Laing's case, the remedies employed were bloodletting repeated three times, saline diuretics, warm bath, and occasional laxatives; and the case terminated favourably, after the secretion had been completely suspended for nine days.* M. Raymond has strongly recommended very large blisters across the region of the kidneys, and has described several cases in which a flow of urine soon followed the application of this remedy, after a variety of active practice had been employed in vain. † As a last resource, Lieutaud recommends emetics. "Nonnullos enim decumbentes, et cum morte colluctantes, hocce præsidio tempestivè adhibito ex orci faucibus ereptos vidi." ‡

CASE V.—In Autumn 1818, I saw a woman aged about 40, who complained of pain across the region of the kidneys; there was some fever, with general constitutional disturbance, and the secretion of urine had been suspended for three days. The complaint was ascribed to a large draught of cold water, taken when she was much heated, while at work as a reaper. She was bled to ℥xx. a blister was applied to the region of the kidneys, and she began to take 20 drops of tincture of digitalis every three hours. In the evening of the same day she passed some urine; next day it was abundant, and in a few days more she was well.

Ischuria Renalis has been chiefly attended to in adults, but I suspect it is not of unfrequent occurrence in infants. The facts on this subject are not at present such as to warrant any general conclusions, but merely to point it out as a most interesting subject of research. Of the affections of infants which terminate by effusion in the brain, and are included indiscriminately under the general name of hydrocephalus, there is reason to believe that there are important diversities. In the present state of our knowledge, I imagine it is generally admitted that the true idiopathic hydrocephalus is a primary disease of the brain, of an inflammatory nature, which must not be confounded with various other affections which terminate by effusion in the brain, though the primary symptoms were of a different nature. Of these there is probably a considerable variety, and in many of them the primary symptoms appear to be in the bowels. These occur chiefly in infants, and it is an interesting object of inquiry, whether some of them are not allied to the affection which has been the subject of this paper. Extensive observation is wanting, before we can venture on any conclusions, but there are facts which point out the inquiry as something more than conjecture. It may be considered as a fact, that Ischuria renalis is frequently followed by effusion in the brain, and it is a fact, that in many complaints of infants which terminate in the same manner, the primary symptoms were in the bowels. Now I believe it will also be found to be a fact, that in many diseases of infants, both simply febrile, and affections of the bowels, there is a remarkable diminution of the secretion of urine, amounting sometimes to a suspension of the secretion. The subject is worthy of careful investigation, and in a practical point of view, is one of considerable importance. A boy aged 9, whose case is related by Dr Willan,* a week after he had recovered from scarlatina, was seized with sickness and diarrhœa, (22d October 1786;) 23d and 24th, was much better, but on the 25th it was found that he passed no urine; his skin was cool; his pulse 90; and he complained of no pain. After the use of the warm bath, on the 26th he passed a very small quantity of urine; but on the 27th, the suspension of the secretion continued; and in the course of the day, he was seized with a kind of fit, in which he became very cold, and lay for some time in a state of coma. He recovered from this attack, however, and continued free from every urgent symptom, until midnight, when he complained that he could not see; then fell into a fit of coma, similar to the preceding, and soon after expired. No dissection was allowed in this case, but in a case considerably similar, which occurred to Dr Willan some time after, "The whole of the mesentery appeared to have been inflamed; the inflammation had extended thence to a considerable portion of the ileum, in which there were found two gangrenous spots, each of them about the size of a sixpence. There was no urine in the bladder; the stomach, liver, and kidneys, were in a natural state; the gall-bladder was very turgid, and the mesenteric glands were much enlarged." This obscure affection had attracted his attention in several other instances, in which children had died unexpectedly, who had not been previously affected with any violent complaint. "The train of symptoms was nearly as follows: At first a slight feverish heat, restlessness, diarrhœa, and sometimes bilious vomiting, which continued for about a week. During that time the urine was made in small quantity, till at length the discharge of it entirely ceased, and soon afterwards the patients died unexpectedly, without complaining of pain or any particular uneasiness." Dr Willan had not an opportunity of examining the bodies in these cases, except in the one already mentioned, in which the mesentery appeared to have been inflamed. In the train of symptoms which he has described, there is a remarkable similarity to an affection of infants, which I have endeavoured to investigate in a former paper, and which I have considered as inflammation of the mucous membrane of the intestinal canal. In the cases of that affection which have occurred to me, the symptoms usually were, diarrhœa with some degree of fever, and frequently vomiting, and several of them were unexpectedly fatal by coma, while no symptoms had previously existed which indicated danger, or pointed out the affection as in any respect different from the common bowel complaints of the period of dentition. On dissection there was found reason to believe that the primary disease was in the mucous membrane of the intestine, in which there were portions in a state of inflammation, sensibly elevated above the level of the sound parts, and generally covered by minute vesicles or small ulcers. There was also remarked, in some of them, a considerable appearance of inflammation, or increased vascularity in the mesentery at the places corresponding to the inflamed portions of the mucous membrane. I know not whether that was the same disease that occurred to Dr Willan, but there certainly is a remarkable similarity. In some of the cases the urinary secretion was observed to be extremely deficient, or for a time suspended, but perhaps this symptom was not sufficiently attended to, for at the time when these cases occurred to me, I was not fully aware of the great importance of it, in the pathology of this affection.

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* Edinburgh Medical Journal, Vol. X. p. 409.

† Medical Obs. and Inq. Vol. V. (Appendix.)

‡ Lieutaud, Synopsis Praxæos-Medicæ, Tom. I. p. 269.

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* Medical Facts and Observations, Vol. III. p. 3.

The following case occurred to me lately. A child, aged 12 months, had enjoyed good health, except that he was liable at times to a loose state of his bowels; he had been weaned at 9 months, and had suffered no inconvenience from that change. On Thursday, 22d September 1820, he was seized with frequent diarrhœa and vomiting, and was observed to pass no urine; the stools thin and watery. The same symptoms continued on Friday and Saturday, and he was not observed to pass a drop of urine during these three days. He was not seen by any medical man until late in the evening of Saturday, when he was visited by my friend Dr Pitcairn; he found him in a state resembling the last stage of hydrocephalus, affording no room for practice; and he died soon after his visit. I examined the body along with Dr Pitcairn. The intestines were externally healthy, except some portions, which were of a dark colour; this was most remarkable about the lower part of the ileum; the mesentery was in many places unusually vascular, but not amounting to inflammation. There was extensive inflammation of the mucous membrane of the intestine in its first stage, at the lower end of the ilium; and a slighter degree in other places, especially in the colon. The bladder was collapsed and perfectly empty; the kidneys, liver, &c. were healthy. In the brain there was a little effusion, and a morbid vascularity in the medullary substance; innumerable red points appearing at every incision, as we observe in cases of acute hydrocephalus.

VI.

Case of Paraplegia. By Ebenezer Gairdner, M. D. Fellow of the Royal College of Physicians.

James Campbell, æt. 25, miner and shepherd, Craigluscar, near Dunfermline. Attended by his wife he waited on me, in the month of September 1820. They stated, that, in June last, he was attacked by a bull, by which he was caught in the back and tossed up several feet into the air. He was immediately rescued and taken up in a state of insensibility; he appeared also to be a good deal bruised. In this condition he lay for about two hours before medical aid could be obtained. When the surgeon arrived he was bled, and other remedies were applied. On recovering somewhat, it was discovered that the back was considerably injured, and that both of the lower extremities were very much paralysed. Though he had little or no vomiting, yet the functions of the stomach were somewhat affected; no apparent injury was sustained on the head. By the remedies used he recovered something further, but little or no relief of the palsy was obtained.

The paraplegia is now so very considerable that he can only move by crutches, and he drags both of his legs; of these I observe, that the volume and athleticity of their muscles are not in proportion to the other parts of his body, yet, it is denied that there is any emaciation. He cannot stand erect, but in a posture bent much forward. On placing him horizontally on his face, and examining the spine, I find that three of the lower dorsal vertebræ appear as if shot outwards, below which there is a little hollow that admits the point of the finger, on inserting which into this hollow with a little pressure, great pain and a peculiar sensation are excited. Appetite is stated to be much impaired, and the digestion of what food he takes to be very indifferent. Bowels rather slow; urine free; speech quite entire. The countenance and the functions of the upper part of the body seem to be rather healthy, and indeed, the appearance seems to have been that of an athletic and good-looking man of about five feet seven inches high, of a dark complexion, yet of a plethoric constitution.

I commenced the treatment by free depletion, and the application of a blister to the part of the affected spine, which was allowed to run as an issue for a day or two,—and the use of friction as soon as possible. The stomach and bowels were kept easy by the use of magnesia, with rhubarb and the aloetic pill.

On the 20th September, the friction, thrice a day by the hair brush, with oil, was vigorously applied to the back, for the space of at least half an hour, each operation. He was ordered to get a hard straw pallias, and an woollen bolster, as hard packed as he could bear, which was placed across. On this bed he lay in the night time, as well as several hours during the day, taking care to have him placed and pinned down directly on his back, and the bolster duly under the affected vertebræ; and to take occasionally gentle exercise, by walking in the room in a posture as erect as possible, but to avoid the exciting any pain or much fatigue.

From the beginning, I had expressed great doubt that any remedies would now be of such avail, as to remove entirely the disease; but in making trial, I enjoined upon the patient and his wife, (an intelligent and very active woman,) the necessity of rigorously attending to the remedies which I was inclined to try, trusting, that his naturally excellent and youthful constitution might give some hope of at least a probable alleviation, which otherwise could by no means be entertained; and from the great anxiety which was constantly evinced both by the patient and his wife, I have every reason to believe, that the instructions were duly regarded.

September 23d. The operations of the friction were not disliked; a prickly and tingling sensation was begun to be felt in the lumbar region, extending down the thighs and legs, and to continue for some little time after the operations; little improvement, however, was as yet observed; bowels continued to be rather slow; appetite still indifferent.

On the 29th, the gait seemed to be rather improved; the prickly sensations continued to be felt after the frictions; bowels kept easy by the medicine; appetite rather improved. In addition to the hair-brush friction, a brush made of feathers was ordered, and the spine to be tickled with it.

Oct. 1.—Little improvement was observed; indeed, he appeared not to be just so well as at last visit; but the vertebræ seemed somewhat better.

℞ Aq. ammoniæ ℥i.
Ol. olivæ ℥ij. ft. liniment, dorso applicandum. Cont. alia.

3d.—He stands the frictions with the brush and liniment pretty well; the prickly sensation is felt from the back downwards, and at the soles of the feet.

On the 14th, he felt himself so much better, that, with the aid only of a stick, and by taking one or two occasional rests by the way, he walked about two miles and a half, without much fatigue, to pay me a visit; but the paraplegia was still very visible, though the appearance of the spine was considerably improved. He reported the bowels to be pretty regular, with only the occasional use of medicine; appetite improved. The blister and issue dressings for a day or two were ordered to be repeated.

On the 30th, there appeared to be a marked general improvement, and he was in high spirits.

On the 7th of November, he again walked to town to see me. He appeared to be quite cool, and not at all fatigued; his gait nearly quite erect, and firm. Expressing great satisfaction, he declared, that he found himself so well, that he thought he might be able to attend to some easy work. On examining the spine, I found that the curve and small hollow were much reduced in appearance, and began to assume the natural form, but little pain was felt by pressure on the place where the small hollow was before so distinct; bowels pretty regular; appetite good. The friction with the brush and liniment, and the use of the straw pallias and bolster, were ordered to be continued; also the aloetic pills, and the powder of magnesia, with rhubarb, as may be required. I recommended some little delay before he applied to any work.

20th.—He has been for some days herding cattle; he feels no inconvenience, only some little weakness of the right leg is felt. Continue the treatment as before directed.

December 20th.—He has continued to the tending of cattle for several hours daily, though the weather has been occasionally very wet, and he has felt no inconvenience. On the contrary, the weakness of right leg is nearly gone; the spine is almost quite natural; the gait erect and firm; bowels easy, without medicine; appetite excellent.

Feb. 5, 1821.—Notwithstanding the severity of the weather, to which he has been daily exposed since last report, he has found himself improve considerably in strength, and indeed he appears in most excellent health. The spine seems to be quite natural, except that the vertebra, immediately above where the hollow was, is left enlarged; but he feels not the least inconvenience, even though I press with considerable force either on it or on any other part of the spinal column.

That part of the practice which was directed to remove the inflammation and pressure, and to restore the due tone of the injured parts, is sufficiently obvious; but I am inclined to apprehend, that the success which has attended the case is in no small degree to be attributed to the means which were employed to restore the natural seats of the vertebræ; and it is only doing justice to the late Mr Baynton of Bristol to say, that it was from his practice, in some juvenile cases of rachitis, that I took the hint of recommending the horizontal, and relieving the vertical, position of the spine, only modifying the bed by the addition of the bolster, to suit better the object which I had in view in the present case.

This case, I may add, goes farther to shew practitioners the advantage of not rashly despairing in those often untoward instances of weakness and affections of the spine, which so often present themselves before us, thus leaving many persons to spend a miserable life. It also shews the necessity of our prevailing upon the parents and friends of such patients to exert themselves in aiding us by those daily and constant attentions without which we never can expect to succeed, and perhaps for the want of this due co-operation, our practice in those cases is so often inefficient and unfortunate, and not unfrequently mischievous.

Dunfermline, Feb. 1821.

VII.

Case of Poisoning, by Laudanum, successfully treated by Venesection. By Mr WILLIAM RICHARDSON, Surgeon.

IN the month of November 1818, Mrs G. æt. 22, a very delicate woman, and within seven weeks after her confinement, having contracted a severe cold, was advised by some old woman to make use of a combination of vinegar, laudanum, and treacle, which her adviser told her would prove an infallible cure. She, not at all aware either of the dose or of the effects of the laudanum, procured from the druggist a quantity, which, from what I could learn, must have been about three drachms; and, having mixed it up according to the old woman's recipe, took almost the whole of it in the course of a night. Next morning, about nine o'clock, her husband came to me in great alarm, and informed me of what she had done, and that, upon his waking in the morning, he had found her in a deep sleep, from which every effort that he could devise to rouse her, had been ineffectual.

I visited her immediately, and found her, as he had described, sleeping profoundly; her breathing regular, but deeper and slower than natural; her pulse full, regular, and slow: in the hurry of the moment I did not count it. I shook her pretty smartly, pinched her, and bawled loudly into her ear, but could not perceive the slightest marks of sensation or consciousness. I caused her to be raised up, and her mouth to be opened, while I poured into it half a drachm of sulphate of zinc, dissolved in water, which I had taken with me. This was not swallowed till it had remained in her mouth a considerable time, and then appeared to be carried into the stomach by an effort of deglutition wholly involuntary. Vomiting did not occur for a considerable time, and not until I had irritated the internal fauces with my finger, when there was a considerable quantity of dark matter rejected, and she was somewhat roused, so as to be able to answer questions, though still very drowsy, and desirous to be left alone. The vomiting was encouraged by making her drink hot water. She complained at this time of slight headach and giddiness. Seeing that she was awake, and thinking that all would go on well, I left her; directing that some coffee should be made, as strong as possible, of which she should take a cupful very frequently; that she should be carefully watched, and kept constantly moving about, and not, on any account, be allowed to lie down, or go to sleep.

About two o'clock, her husband called on me, and informed me, that, being obliged to go out, he had left his wife under the care of a nurse, and, when he came back, that he had found her in a state of insensibility, which the nurse told him had come on gradually. I found her comatose, her breathing slightly stertorous; and seeing that she was not at all roused by the exhibition of a dose of aromatic spirit of ammonia which I gave her, I poured some of the same fluid into the nostril, which produced sneezing, and a temporary amendment; so that, on being interrogated, she indicated that she felt great heaviness in her head and vertigo; but, when we attempted to make her walk, her limbs failed under her. The coma now appeared every minute to increase, the breathing to become more and more stertorous; she was supported in a chair, her arms hanging like those of a dead person; when spoken to, no answer was returned; and, when pinched, she did not appear to have any sensation. I tied up her arm, and took away fourteen ounces of blood, by which she was immediately relieved; so much so, that, before the stream of blood was stopped, she opened her eyes, and answered, that she felt her head very much relieved from the heaviness and giddiness. After this, she continued gradually to improve. I directed an active purgative; and, next day, she had no complaint, except slight headach, and the cough, which still remained, notwithstanding the hazardous remedy she had made use of to get rid of it.

The following case, which was pointed out to me by my friend, Dr Milligan, is, as far as I know, the only one upon record, in which blood-letting has hitherto been employed as an antidote for an overdose of laudanum.

> " An unfortunate female, when in a carriage with a friend, swallowed an ounce of laudanum. The action was observed, and she was conveyed by her terrified companion, in about half an hour afterwards, to the door of the practitioner under whom the author then studied. She was taken out in a state nearly insensible. Ten grains of vitriolated zinc were instantly administered, without effect; ten more were added in a few minutes afterwards; and other means were, in vain, resorted to, to excite the action of vomiting. As the comatose symptoms continued evidently to increase, a vein was opened, and nearly twenty ounces of blood taken away. Sense and motion immediately began to return; the emetic action of the zinc was produced; and the patient was left, in a short time afterwards, with no other re-

maining symptom of the danger she had escaped than a little languor." *

In the case narrated by Dr Stock, the remedies were applied in a very short time after the opium had been taken; the symptoms were not so fully marked, and yielded at once. In Mrs G.'s case, the opium had been retained so long in the stomach, that its full effects upon the system were produced; and even when that viscus was completely emptied, although there was a temporary amendment, yet, after a short time, the symptoms returned with increased violence. It may appear singular, that so small a quantity as three drachms of laudanum, and that taken in divided portions, should have produced such powerful effects, when we know that a man has recovered after swallowing six ounces; † but, besides that I could not obtain with precision the exact quantity of the drug that had been procured, it is well known, that in some individuals, and under certain circumstances, a very small quantity of opium will act with much more energy than a much larger dose would do in ordinary cases; and this female, by reason of her natural temperament, which was exceedingly delicate, and of her situation, far advanced in pregnancy, may be supposed to have been more than usually susceptible of its deleterious influence. It would appear, also, from the experiments of M. Orfila, ‡ that vinegar, although it may be useful as an antidote after the opium is expelled from the stomach, if given along with it, or before it has been rejected by vomiting, actually increases its poisonous qualities. This may have happened in the present instance.

Before this case occurred to me, I had not seen the one recorded by Dr Stock, nor had I read the work of M. Orfila, who, from his experience of its effects upon dogs, has recommended blood-letting. The practice was suggested to me by the evident similarity of the symptoms to those of apoplexy, and by the recollection of a hint which I had heard thrown out by Dr Hamilton junior, the distinguished Professor of Midwifery in the University of Edinburgh, who, in pointing out the effects of opiates in supporting the powers of life under the exhaustion brought on by profuse uterine hæmorrhage, and the immense doses that are given without producing the narcotic effects of opium, was led to deduce the inference, (which all the experience we have had upon the subject proves to be correct,) that, *vice versa*, blood-letting would modify the effects arising from an immoderate dose of opium.

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* Stock on the Effects of Cold, p. 128. Note.

† Vide Marcet in Medico-Chirurg. Transactions.

‡ On Poisons.

From the result of these two cases, and from the experiments detailed by M. Orfila, we are, I think, warranted in assigning to blood-letting a very high rank amongst the remedies to be employed in cases where opium has been taken in immoderate quantity; and I should think it would be equally useful where poisoning was the consequence of the ingestion of too large a quantity of any of the other substances belonging to the class of narcotics. In every case, vomiting should be the first thing resorted to, with purgative clysters, if there is reason to think that the poisonous substance has made its way into the intestines; but, if the symptoms do not yield upon the evacuation of the stomach, or if the emetic does not operate speedily, then, I think, blood-letting should be immediately resorted to. The coma and the convulsions are evident proofs of oppression of the brain, and for this state we can conceive no remedy more appropriate than blood-letting. Further experience must determine the value of the practice, and point out precise rules for its application.

Sloane Street, 15*th May* 1820.

VIII.

Case of Tic Douloureux Cured by Cinchona. By D. R. Robinson, Member of the Royal College of Surgeons in London.

Miss D. aged 33 years, of a strong constitution, generally healthy, her family subject to spasmodic affections. In the month of June 1819, was attacked with a slight pain in the left lower jaw; was not aware from what cause it proceeded; attributed it to toothach and rheumatism. To the last named complaint she was formerly subject, and had rheumatic fever several years ago. The attacks of pain would come on suddenly without observing any set period; the spasm has come on in the street, when visiting friends, but more particularly after eating. The paroxysms, however, assumed a more formidable appearance about the beginning of January 1820, when Miss D. removed from P——e to Mevagissey, a distance of fifty miles. She had hitherto considered the complaint so trifling in its appearance, as to need no medical assistance.

When the paroxysms, however, became more violent in degree, duration, and frequency, she thought more seriously of the malady, but still at times attributed it to odontalgia, and fixed, for extraction, on a sound tooth, from whence the pain originated. On the 10th of January the posterior sinistral eye-tooth was removed; on examination it was found perfectly healthy: the gum remained sore and inflamed for some time after. The following day, about 10 o'clock in the evening, she had a most agonizing paroxysm, which commenced in the anterior sinistral eye-tooth, the tooth situated anterior to the one which had been extracted. The pain darted from thence to the angle of the jaw, the ear, the mastoid process, the parotid gland, the cheek-bone, the temple, and the central point of the left parietal bone. The pain seemed chiefly confined to the left side, and the disease appeared principally to exist in the fifth pair of nerves, particularly the superior and inferior maxillary branches, the portio dura of the seventh pair, the nerves of the parotid gland, all of which communicate and form a net-work on the face, called the pes anserina. During the paroxysm feels a creeping cutting pain in the gums, and a throbbing sensation in the temples, and just under the parietal bone. The patient compares the pain to a dart shooting through the parts affected—to cutting the flesh from the bone—to screwing the head with much violence—or to entire decapitation. When the paroxysm is present, the mouth fills with water, the discharge from the left nostril is increased, with an effusion of tears from the left eye. Face exceedingly flushed; pulse 90 to 112. At the period when least expected the attack makes its appearance. A short time previous to the spasms coming on, she experiences a sore, creeping, gnawing, cutting pain in her gums, with coldness in her hands and feet. The paroxysms generally commence after eating, when speaking, or even when the body and mind are unemployed. The distressing sufferings of the patient sometimes continue ten, fifteen, twenty, forty, or sixty minutes; seldom less than ten, or more than ninety minutes.

When the exacerbation ceases, the pain in the head gradually subsides, then the face and ear become easy, and the tooth after some time becomes free from spasm. January 11th.—To ameliorate the poignant sufferings of the patient three leeches were applied to the gums, and a blister put behind each ear, which discharged copiously for several days. In the evening had a paroxysm, which lasted an hour. The left side of the face fomented twice a day with chamomile flowers, and poppy heads boiled in water. The cheek and gums rubbed three times a day with the following liniment:

℞ Tinct. opii, Spts. æther. vitriol. ā ℥i. M. ft. liniment.

15th.—Had another attack, which continued three quarters of an hour. Three leeches applied to the gums. ℞ Emp. oxycroc. Pulv. opii p. æq. spread on leather. One plaster applied to the cheek, and another to the left temple. The bowels kept regularly open by cathartics.

℞ Tinct cinchon. comp. Tinct. castor. ā ℥i. M. ft. gutt. Capt. coch. ij. parv. ter in die.

19th.—Had a return of extreme pain, which lasted one hour and a quarter.

Tinct. Foment. et. Emp. contin.

28th, at one P. M.—Had a severe paroxysm, which did not subside till half past two o'clock. Face fomented; ten leeches applied to the left cheek, which brought off a large quantity of blood. Seven, P. M.—The pain returned with much violence for one hour. Lint dipped in æther and laudanum applied to the gum; opium in substance chewed to alleviate her sufferings, but without success. Indeed, nothing whatever that was tried afforded immediate relief, or in any way shortened the duration of the paroxysms. On the 31st, had a slight spasm for half an hour. On the 4th of February, at three P. M., she had a most severe and excruciating paroxysm for seventy minutes. At ten minutes past four o'clock, when the parts affected were easy, she commenced taking the following medicines:

℞ Pulv. cinchon. ℥ij. divid. in chart. xxiv. Capiat unam omni hora in lact. vaccin. mist.

℞ Tinct. cardam. comp. ʒss. Tinct. valer. ammon. ʒi. Aq. ℥iv. M. divid. in haust. iv. una tertia quaque hora sumenda.

The above powders and draughts were not administered during the paroxysms, nor was any external application used while taking them.

Tuesday 8th, nine A. M.—After breakfast, a violent paroxysm came on, and continued one hour and three quarters. 9th, two P. M.—Had another paroxysm, which lasted forty-five minutes; the spasms returned at 11 P. M. for one hour. 12th, seven P. M.—After tea, a violent paroxysm came on, and continued one hour.

The patient persisted in the bark plan, with the greatest punctuality, every hour, for nine successive days and nights; after which, she has not had the slightest return of the paroxysms. The bark produced fever; furred tongue; unpleasant taste in the mouth, sometimes sweet, salt, and acid; constipation of the bowels; loss of appetite; increased action of the heart and arteries. As two carious teeth remained in her head, it was thought advisable to have them extracted. On the 14th, the sinistral dens sapientiæ of the lower jaw was removed; and, on the 17th, extracted the decayed root of the posterior dextral dens cuspidatus of the upper jaw. In summing up the remedies employed, I cannot but give credit to the cinchona in achieving the cure. It must be allowed, from ocular demonstration, that it increased the frequency of the spasms by increasing the irritability of the system: but, after its administration, it left the nervous system in so strengthened a state, as to eradicate this painful affection from the nerves of the face. Perhaps some persons, not acquainted with tic douloureux, might pronounce this complaint rheumatism, or odontalgia. It, however, distinguishes itself from the former disease by the extreme violence of the pain, and the shortness of its duration; whereas chronic rheumatism is a dull, aching pain, long continued, and increased at night. The acute species is accompanied with much heat, swelling, and frequent discoloration, with continual pain. The toothach consists of a throbbing, aching pain, in one or more decayed teeth, and rarely or never affects the nerves and their ramifications which have been mentioned, and which are generally the seat of tic douloureux. Two ladies in London, and one in France, have been completely cured of this painful malady by persevering in the bark plan. Two scruples of pulv. cinchon., taken every hour, for the first twenty-four hours; on the second day, every two hours; on the third day, every three hours, and so on—have been beneficial in curing patients, where the disease has not manifested so much severity as the case recorded.

Mevagissey, Cornwall, May 10, 1820.

IX.

Case of Imperforate Anus. By JOHN WAYTE, Surgeon, Calne.

FRANCIS L——, born March the 7th 1814, not having passed any thing *per anum* during the whole of that and the following day, became very restless and uneasy, and was affected with constant vomiting. His nurse attempted to administer an enema, but in vain. On being sent for and acquainted with these circumstances, I deemed it proper to examine the rectum. All the external parts were well formed, and no one could, from their appearance alone, have suspected malformation; but, on introducing my finger, a complete obstruction was encountered about an inch from the verge, leading one at the moment to apprehend an imperforate rectum; yet, from a membranous kind of feel communicated to my finger on the child's straining, there was reason to trust that the case was not altogether so hopeless. Convinced that a perforation afforded the only possible means of relieving my little patient, and, that without it, death must inevitably ensue, I determined on operating to that effect. The little finger of my left hand being introduced, and pressed with moderate force against the obstruction, a pointed probe was cautiously guided along it, and pressed onwards through the supposed membrane. In its passage it communicated a sensation of thickness, and, on withdrawing it, some flatus escaped with a hissing noice, affording me a clue in what manner to proceed. With a view to dilate this aperture I followed its course with an hydrocele trocar, and afterwards with a bougie of rather larger dimensions; on withdrawing which I was much pleased to witness the appearance of meconium, mixed with feces, which continued to come away frequently, but in small portions, until the 14th, when the quantity was considerably diminished. On the 15th, the opening having closed, I repeated the puncture, and, by frequently introducing bougies, the child proceeded tolerably well until the 23d, when the passage was again much contracted, and the abdomen proportionably distended.

Had the obstructing cause been merely membranous, this disposition to contract would not, in all probability, have been great, and certainly, from the sensation given me in passing a bougie, I had reason to consider it carneous.

On the 27th I enlarged the aperture with a full sized trocar, used in the operation of paracentesis, on which occasion the child lost rather much blood than before, and was thereby somewhat weakened. No stools, however, were procured until the following morning, from which time until April the 12th they continued to be discharged plentifully without the necessity of introducing any instrument whatever. I must here remark, that this plan of allowing so many days to intervene, without the passage of bougies proportionate to the opening, was very contrary to my wishes, but, as some pain was unavoidably excited by them, the mother, seeing the motions so copious, would not allow of their repetition, although I urged a regular perseverance in this practice as alone likely to ensure success. The abdomen was now reduced to its natural size and softness, which had not previously been the case, as the food taken had exceeded the egesta. From the 12th the feces again declined in quantity, the passage becoming at length so obstructed as only to allow the escape of liquid drainings, and, as the child continued at intervals to suck very heartily without the least vomiting, his abdomen, on the 18th, was again tumid and tense.

I must here take occasion to remark, that, although from the time of his birth, only thirty-six hours elapsed before motions were procured, yet, during this interval, every thing was rejected. Afterwards, however, although nearly a week sometimes passed without a dejection, still he was never again sick. Whether the vomiting, during the former period, was excited by any peculiar acrimony of the meconium, I will not take upon me to determine; but it certainly has very much the appearance of it.

The parents were by this time convinced of the necessity of the regular and daily introduction of some instrument to preserve the passage open, and consented to the employment of any means which might be considered proper. I expected that a repetition of the puncture would have been indispensable; but, resolving to give a previous trial to blunt instruments, I commenced by passing a very small bougie twice a day, and, having succeeded in procuring stools, gradually increased the bulk of my instrument until May the 13th, when the opening would allow of a middle-sized rectum bougie. The boy now rapidly improved, and grew strong, and, although a daily continuance of the same means were required, yet there seemed a fair prospect of a complete recovery at last. These hopes were, however, soon after blasted by the discovery that a slight groove was made upon the bougie in passing it, which gradually increased so as at length to transmit a sensation of grating to my fingers. Slight febrile paroxysms of the hectic type became evident, and, from the indentation upon the bougies becoming deeper, and assuming a spiral form when rotated, there seemed little doubt of its being occasioned by a portion of the os coccygis in a train for separation, and these features totally changed the face of our prognosis, as the result too clearly illustrated. The hectic fever increased, diarrhœa to a considerable extent supervened, and the child died from the effects of long continued local irritation, having lived upwards of six months. Permission for opening the body could not be obtained.

X.

Contributions to Pathological Chemistry. By THOMAS STEWART TRAILL, Physician, Liverpool.

Oil Detected in the Serum of Blood Drawn from a Person labouring under Internal Inflammation.

THE individual whose blood became the subject of the following experiments was a middle aged man, of a rather spare habit, attacked with a severe pain in the region of the kidneys, and other marks of nephritis. He was attended by Mr Farr, a surgeon practising in Liverpool, who remarked the singular appearance of the serum of his blood, when separated from the crassamentum, and sent it to me for examination.

It has the following characters:—

Colour, a perfect Isabella or cream yellow. It is opaque, and rather more viscid than serum in its ordinary state. Its specific gravity, at temperature 44°½ F. = 1.0266, which is equivalent to about 1.0256, at temperature 60°. When left at perfect rest for several days it neither deposits any sediment nor becomes less opaque, nor undergoes any change of colour. Indeed, a portion of it, kept for above four weeks, has not yet lost its cream colour, though the smell indicates that decomposition has commenced.

When gently heated it wholly coagulates into a firm cream-coloured mass. The heat was continued for a long time without rendering the coagulum brittle. It was therefore cut into small pieces, and exposed between folds of writing paper, to a temperature a little above that of boiling water. The paper was quickly stained with greasy marks, the permanence of which indicates the presence of fixed *oil*. The surface of the fragments had also a greasy look, even after they had become brittle: and, on examining the capsule in which the serum had been evaporated, its bottom was evidently oily, but on cooling became opaque from the consolidation of a film of this greasy matter, which, however, was readily melted by a gentle increase of temperature. Shreds of the stained paper burnt much more brilliantly than pieces of the same sheet when unsullied. From these appearances I had no doubt of the existence in this serum of an oil, which is concrete at the usual temperature of the air, but, from the unusual occurrence of such a circumstance, it became desirable to have other proofs of its nature, especially of its inflammability. The small quantity of the serum, in my possession, rendered several tests of oil impracticable; but amianthus appeared a substance well suited to shew the inflammability of even minute quantities of oily matter. A few fine fibres of this mineral were therefore selected. After being heated to redness, to guard against the presence of inflammable matter, they were applied to the bottom of the glass capsule to absorb the fluid oil, and on the application of an ignited body, they now gave out a clear and brilliant flame of short duration. This experiment I was enabled to repeat several times in the presence of several medical and philosophical friends, who were satisfied of the oily nature of the substance in question. The quantity of this oleaginous matter present in the whole mass of blood seems too considerable to have its origin in any other source than the absorption of animal fat by some diseased action of the vessels in this individual. We can scarcely suppose it derived from any article of food; for did oil in this manner find its way into the circulating fluids, it must be a frequent occurrence, and its presence in the blood must have been long ago detected by the refinements of chemical analysis. The same argument applies to the supposition, that it arose from the escape of oily matter from the cellular texture during venesection; and the quantity is far too considerable to be attributed to such a source, especially in a person of a spare habit.

The saline contents of this serum afford no result different from what usually occurs, except that, judging from the taste, it probably contained less muriate of soda than what is usually found in human serum. The small quantity of the fluid originally sent to me, rendered it impossible to ascertain the proportions of each salt which it contained.

The quantity of solid matter in it was found by evaporating to dryness, in a temperature of 212°, 135 grains of the serum. The oily matter was partially removed by laying the coagulated albumen on paper; and the solid residue then weighed 20.5 grains, which is equivalent to about 15.18 per cent. Our best experiments on serum of blood, as those of Berzelius and Marcet, give about one-tenth as the proportion of solid matter in this fluid; but, in the present instance, the solid contents bear the proportion of between one-sixth and one-seventh to the whole. The peculiar colour of the serum now described seems chiefly owing to a redundant portion of albumen, and perhaps also to the presence of oily matter. This latter appears to be combined with the serum, probably by the intervention of the free alkali existing in blood; for, after remaining one month at perfect rest; there is not the slightest appearance of any separation of oil from a portion of the serum which I have this day examined.

It may be proper to add, that the patient whose blood gave rise to this communication soon recovered, and is now in perfect health.

Analysis of the Fluid drawn by Tapping, during Life, from the Heads of Hydrocephalic Infants.

The heads of infants labouring under hydrocephalus, with much enlargement and separation of the bones of the cranium, have been repeatedly tapped, with evident advantage, by some of our Liverpool surgeons. The case attended by Dr Rose and Dr Formby is already before the public. The operation was several times repeated, and I examined the fluid drawn off at two different times.

The first, in July 1817, was a very pale fluid, containing very little albumen, and had rather the characters of a mucus than of serum. This arose from the presence of lactates, with a minute proportion of albumen. Its specific gravity was only 1.0058; it did not coagulate when boiled, but by evaporation afforded a thin semitransparent pellicle, which, when thrown into water, became soft and yellowish like mucus. The hydrocephalic fluid was not precipitated by infusion of galls. It afforded a copious precipitate with nitric acid, and with superacetate of lead. With this last, the precipitate exceeded that which serum, drawn from a patient under ascites, affords to the same reagent. The saline contents of the hydrocephalic fluid were, a considerable quantity of muriate of soda; an alkali not fully saturated with acid, for the fluid rendered vegetable infusions green; phosphate of soda and some salt of lime,—for oxalic acid gave traces of the presence of the latter.

Some months after the first tapping, the child's head was again punctured, and eight ounces of fluid were abstracted. This, however, had all the characters of diluted serum. Its specific gravity was now slightly increased, being = 1.0080. When slowly evaporated, it formed a pellicle which was slightly opalescent, but when near the boiling heat, it yielded an opaque yellowish white coagulum, indicating the presence of a considerable quantity of albumen. This, when slowly dried at a temperature a little above 212°, became brittle and corneous in appearance. It was now cut in pieces and well washed with distilled water, to separate the saline matters, and again dried. The albumen then = 151.6 grains. The washings afforded by spontaneous evaporation many cubic crystals of muriate of soda. The whole was digested in alcohol. There remained in the capsule little friable whitish lumps, which, when dry, adhered together by the intervention of a gummy-looking matter, which seemed to be some compound of lactic acid. The rest of this portion seemed to consist of earthy salts, and equalled 1.9 grain. The soluble salts, when dried at a temperature of 212° = 28 grains, chiefly consisting of muriate of soda, a little muriate of potash, with some small quantity of lactates and subcarbonate of an alkali.

In another case which was lately under the care of my friends Dr Freckleton and Mr Hay, the fluid abstracted entirely resembled the last described, and the child seemed greatly relieved by the operation, at two different tappings; but the prejudices of the parents have prevented this new practice being pursued farther.

In another case where it was had recourse to, one of the surgeons in attendance assured me that minute portions of whitish matter, exactly resembling brain, were discharged through the puncture, without any apparent injury to the infant.

The experience of our highly respectable surgeons in this place has completely established the safety of this bold operation; and although we are not yet enabled to offer it as an absolute cure for this very intractable disease, we are justified, from the apparent benefit which has in several cases followed the operation, to recommend it to the notice of our medical brethren.

Analysis of a Pulmonary Concretion.

I some years ago analysed a *pulmonary concretion*, brought up during a paroxysm of coughing. It was highly fœtid when discharged, from pus adhering to it. As usual in such cases, it consisted of phosphate of lime enveloped in a membranous substance, which retained the form of the concretion after the earthy matter was dissolved away.

Analysis of Nephritic Calculus.

On opening the body of a gentleman who had long suffered from a disease of the kidney, the right kidney was found to be enormously enlarged, and filled with pus, and sticking in its pelvis was a coralliform calculus, which when recent weighed 92.7 grains, and after eight days 82.7 grains. This calculus I examined, and found to consist almost entirely of oxalate of lime, a substance which, I believe, very rarely forms a renal calculus, though not unfrequent in the bladder.

Large Biliary Calculus.

In opening the body of a gentleman who had long laboured under disease of the liver and spleen, I found one of the largest calculi of inspissated bile which I remember to have seen. When recent, it weighed 201 grains. Besides this one, the gall-bladder contained three smaller, each about the size of a horse bean.

Intestinal Calculus of Carbonate of Magnesia.

Our profession is indebted to Mr Brande for pointing out the retention of magnesia in the bowels as the probable cause of disease in certain cases. The following instance occurred to me above two years ago:—A girl, about six or seven years of age, was affected with febrile symptoms, and pain in the abdomen. Laxatives were administered; and, along with feces, several tea-spoonfuls of a yellowish powder, in coarse hard grains, exactly resembling the *yellow sand* sold in the streets of Edinburgh, were voided. This had been once observed some months before, and was attributed to the child having swallowed sand along with some strawberries which she had eaten. I separated the animal matter by washing, and heated the powder in a platina crucible, when it became perfectly white, and was found to consist entirely of pure carbonate of magnesia. The child had not used any medicine containing magnesia for several months previously. The probability is, that this substance had long been lodged in the alimentary canal, and became granular from uniting with mucus, and being subjected to the continued peristaltic motion of the intestines. There can be little doubt, that substances, so gritty and sharp as these particles were, must have irritated the delicate coats of those organs. The obvious indication was, to employ castor oil and acidulous liquids; and under this treatment the disease speedily subsided.

Such instances, however, should not deter us from freely employing so valuable a medicine as magnesia; but, when it does not move the bowels, its inactivity is probably owing to deficiency of acid in the alimentary canal, and it might be judicious to supply this want by lemonade or other acidulous liquids.

Liverpool, 15*th January* 1821.

XI.

Case of Hydrocephalus Internus, in which the Operation of Puncture was performed. By GEORGE FRECKLETON, M. D.

J. BLAKE, æt. eight months, was admitted a patient of the Liverpool Dispensary on 17th September 1820. Has been a sickly child from his birth. At two months old was attacked with convulsions, attended by a disordered state of the bowels. About five months ago the mother first observed any enlargement of the head, which she stated to have been most remarkable at the vertex. The child had undergone no regular course of medical treatment. To prevent its constant crying the mother had made a practice of giving it occasionally a few drops of laudanum. The head, when I first saw it, was very much enlarged and tense, measuring, in circumference, 21½ inches, and across the vertex, from ear to ear, 14½ inches. The parietal bones appeared very large. The os frontis was of singular conformation, having, in a line with the sagittal suture, a pyramidal portion of bone apparently insulated, or only partially united to it. The bones of the head were much separated, and fluctuation could be distinctly felt in the head on the slightest motion of the child. The child was much emaciated, and incapable of noticing surrounding objects, the eye squinting to a remarkable degree. My friend Mr Hay having agreed with me in opinion that this was a favourable case for tapping, on September the 19th he performed the operation. Having made a puncture with a lancet at the anterior superior angle of the left parietal bone, near the os frontis, he introduced a small trocar, and allowed ℥viiss of fluid to flow through the canula. The head was held, and a steady pressure kept up during the operation. The fluid was of a light straw-colour, partly tinged with red, in consequence of a slight admixture of blood. The child appeared uneasy during the operation. The head was bandaged so as to keep up an equable and firm pressure, and a tea-spoonful of Plenck's * mistura hydrargyri was directed to be given to the child three times a day.

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* The following is the composition of this mixture:
℞ Hydrargyri purif. ʒi.
Mellis optimi ℥i.
Aquæ puræ ℥viij. M.

It is worthy of remark, that a small portion of what w posed to be medullary matter preceded the flow of water the orifice made by the trocar, and induced us to consider that the fluid was contained in the ventricles.

On the day following (Sept. 20th) the mother stated that the child had had some slight convulsions during the night, but had slept well without its usual dose of laudanum. About ℥vij. or ℥viij. of fluid had oozed through the opening, in addition to what had been taken away by the operation. The size of the head appears diminished. Bowels and pulse regular.

21st. The child appears much better; has slept well; bowels and pulse regular. The head has assumed a more natural shape, and the general appearance of the countenance bespeaks more intelligence. The mother describes the child as appearing more restless or uneasy than before the operation.

22d. Has slept well; seems more lively; opens his eyes with less appearance of squinting.

23d. Continues better; sensible of light; appears to suffer from teething. Dimensions of the head 20½ inches in circumference, 12¼ over the vertex.

25th. Dimensions as above. The medicine begins to affect the bowels, producing some degree of griping.

The operation was repeated, but, in consequence of the os frontis having advanced to the point of the last incision, the present puncture was made with a lancet near the anterior fontanelle. The quantity of fluid taken away was ℥iij. and ʒij.

26th. No fluid discharged since the operation. The child is evidently much better. The scrotum appears anasarcous. The mother thinks that it has passed more urine lately, but of this she gave a very unsatisfactory account.

28th. Much better; seems to know the mother.

30th. The mother thinks that the head feels heavier than it did; urine undiminished; bowels not so open as they have been for some days. The child was asleep at my visit.

October 2d. The operation was again repeated, and about ℥vij. of a dark orange-coloured fluid was discharged. The medicine had been omitted for some days in consequence of its griping.

No material alteration took place between this date and the 9th October, when, the head appearing very tense, it was again punctured, and about ℥vij. of a less highly-coloured fluid were taken away. The child's general appearance was more favourable; evidently more lively and sensible of the pain occasioned by the lancet. Directed to repeat the mixture first prescribed.

10th. The child has cried almost incessantly since the operation. The head appears to be filling again.

From an idle suspicion instilled into the mind of the mother by an officious neighbour, that our treatment of the case was merely an experiment, we declined any further interference in the case, unless solicited by the mother to perform the operation.

On the 8th November she again applied to us; the child's head having become very considerably enlarged and tense; and we consented to repeat the operation, taking away ℥xvj. of a light straw-coloured fluid. The child was very uneasy after the operation, and was occasionally convulsed. The symptoms grew gradually more unfavourable, and early on the morning of the 9th the child died. Having obtained permission from the friends to examine the head, in the afternoon of the same day I went, accompanied by Mr Michael Dawson, who opened the head, and to whom I am indebted for the following accurate description of the appearances.

Dissection.—The integuments of the head being divided in the customary manner, the fontanelles were found of immense size, and the bones loose. Between the two portions of the frontal bone a central ensiform portion projected, and was united to them at their facial extremity. This had been formed from a point of ossification distinct from those of the frontal bone. When the pericranium and dura mater were divided round the circumference of the os frontis, and this bone was removed, the brain presented an unusual appearance of flaccidity, as if a large cavity were in its centre. A circular portion of each anterior lobe was now removed, which at once exposed three large round cavities, communicating freely with each other, and containing three pints of fluid. These were the two lateral, and the third ventricles, and the opening by which they communicated, must have been the *vulva* or *foramen commune anterius*, so much dilated that an egg might have passed through it from one ventricle to the other. The medullary parts of the brain had lost their natural figure, and seemed to be one confused mass, nor could the cornua of the lateral ventricles be distinguished from the general cavity. The septum lucidum could not be traced, nor, of course, the fifth ventricle. The brain was much expanded, and at its thickest part, under the parietal bones, did not exceed half an inch in thickness. The upper part, near the vertex, through which the trocar had passed, in tapping, was not a quarter of an inch in thickness. The convolutions of the brain were easily separated by the fingers. The lining membrane of the ventricles was somewhat thicker and firmer than the healthy structure. The cerebellum was not enlarged like the cerebrum, but had been preserved in its natural size and situation by the firm tentorium. The cerebrum, not having the same support, had gradually yielded to the pressure from within, occasioned by the regular increase of the quantity of fluid, and had enlarged the capacity of the cranium, the bones at this part being less firmly connected. Very little fluid was contained in the fourth ventricle. Several spots were observed on the right side of the head; on the internal surface of the dura mater, which seemed to be extravasated blood, though in very small quantity; they were little more than discolorations, and scarcely deserved the name of coagula. The opening which had been made in the last operation was scarcely closed. The trocar had evidently passed into the lateral ventricle.

Liverpool, January 1821.

XII.

Hydrocephalus Chronicus treated by Operation. By JOHN LIZARS, Esq. F. R. S. Fellow of the Royal College of Surgeons, and Lecturer on Anatomy and Physiology, Edinburgh.

> "Operations strike a deeper interest into the public mind than the daily cures we perform. The passion of acquiring character in operations is surely full of danger."—JOHN BELL.

EVER since my attendance on Monro Secundus' Lectures in 1805, I have reflected on the possibility of curing this dreadful malady by operation.—"Innumerable children are cut off, and whole families made desolate, by effusions into the cavities of the brain." Dr Monro, who, to the talents of a scientific physician, united those of a consulting surgeon, suggested in his Lectures a method for evacuating the fluid secreted in this disease. He has likewise mentioned a case in his work on the nervous system, where he recommends evacuating the water, provided it is effused between the dura mater and the surface of the brain, for he considered it, at that time, imprudent to pierce the substance of the brain. On opening the dura mater with a lancet no fluid flowed, therefore the operation was abandoned. Monro's observations on this operation are deduced from its history. He cites cases from Ferdinandus, Fabricius, Panarolus, Wepfer, Muraltus, and Le Cat, and states, that, "within a few hours after the operation, every one of their patients died!" He, therefore, concludes, "When we consider the various dangers which must arise from the puncture of the substance of the brain—from the unequal bending pressure, and, perhaps, laceration of parts, which must happen when the brain collapses—from the admission of air—from the impossibility of adapting the cranium exactly to the brain for its support by the application of any bandage—no prudent surgeon will embark himself in such an attempt,—'ne quem servare non potuit, occidisse videatur.'" However plausible these observations are—however forcible they appear from their deduction from the history of the operation—however appalling from such imperious language, coming from so great authority,—I have ever considered them as unstable and inconclusive. Even Dr Monro himself thought differently in 1805 to what he wrote in 1797, for he proposed evacuating the fluid within the ventricles from the occiput. To the ancient authors mentioned by Monro we may oppose Hippocrates, Paulus Aetius, Albucasis, and Arantius. * Fortunately, in the early career of my profession, I had equal authority to oppose to this reasoning of Monro. My late deeply-lamented preceptor, Mr John Bell, had taught me, "that the brain, in its own nature insensible, may be piecemeal destroyed without the faculties being ruined; that no local injury offends; that the faculties are obscured by such causes only as affect the whole; that the slightest general injury produces the worst symptoms, the most desperate local injuries none." Of the truth of these assertions we have only to consult his scientific work on Surgery, Vol. III. and the surgery of Wiseman. I had also the good fortune to witness several cases of injury of the brain—the one of the boy related by my partner, Mr Allan, in his first volume of Surgery, page 417, I had the daily task of dressing. The first assertion of Monro, therefore, is groundless; equally so are the others, as the case will prove.

Convinced of the probability of success in curing this disease, particularly when taking into consideration the analogy of the cure of spina bifida, and other dropsical affections, and finding that the authors quoted by Monro had either only heard of

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* "Et licet Arantius libro de tumor. preternatur. contendat nunquam esse deveniendum ad incisionem in hoc affectu, tamen ipse recedit gratia a magno Hipp. 2 de morbis, Paulo Aetio, Albucasi incisionem commendantibus."

the operation having been performed, or, when they were eye-witnesses, that the fluid was evacuated at once,* I proposed in 1815, to a medical gentleman, on whose opinion I place the highest value, as he is intimately acquainted with the history of his profession, and has witnessed extensive practice, to put the operation to the test on a child of a lapidary in town. He, however, dissuaded me from it, as being a rash attempt. "What should have been done for the hundreds of patients whom Morgagni and Valsalva suffered to die without help? Are we to offer no chance for life, when there is nothing but despair? Can the surgeon be said to destroy by his operation a patient who is declared past all hope? Can a patient suffer greater agony than convulsions, or be worse than dead?"

Last summer, I mentioned my ideas on the subject to my friend Dr William Campbell, Lecturer on Midwifery, whose extensive practice in the diseases of children enables him to form a correct opinion of this complaint. He immediately concurred, and mentioned that there was a case related in the Medico-Chirurgical Transactions, by Dr Vose of Liverpool, which had been successful. Accordingly, in December last, he called me to visit a child afflicted with this disease, which he had been most judiciously treating, with a hope of being able to cure it without an operation. He had purged it briskly with calomel, and had applied repeatedly blisters to the nape of the neck and along the spine, and used mercurial frictions, but all to no purpose. The little one, a female child of the name of Elizabeth Davidson, was born about four months and eight days ago, of healthy parents, and apparently in sound health herself, as Dr Campbell testifies, who attended the mother during her confinement. But, in six weeks after, she was attacked with epileptic fits, which were shortly after followed by strabismus and an idiotical look, accompanied with torpidity of the bowels. The head soon evinced the deposition of water, and confirmed my friend, Dr Campbell, in his conjectures that hydrocephalus was forming.

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* Wepfer, in the detail of one of his cases, says, that the mother of the child went away indignant at the advice which he gave her not to allow the head of her child to be touched; and that he heard of a surgeon who had been bold enough to operate, and the child died. In another case all the water was evacuated in twenty-four hours.

Fabricius, who is very imperious in his language, in one case thus expresses himself:—"After some months, chirurgum juvenem ingeniosum tamen satis, in consilium adhibuerunt." This young surgeon cut the right bregma, (I imagine one of the posterior,) and extracted at once about a pound of clear water. He then applied a pledget, and stopped the wound with a plaster. But the head was so turgid with water (for the disease had been allowed to go on for nine months) that it continually flowed copiously until the child's strength became so debilitated that in thirty-six hours it died. "Vides itaque vir clarissime, (ait) quam periculosa sit apertio cranii et evacuatio aquæ hydrocephalis, idque non immerito." He mentioned, that, in two cases, he found the water within the ventricles, and satirically adds, "Hæc autem absque mortis discrimine fieri non posse, etiam tyrones norunt,—imprudenter itaque agunt illi qui in hydrocephalis multa promittunt, sectionemque tentant." Such dictatorial language is contemptible; and of all melancholy contemplations, the practice of the ancients is the most afflicting.

Ferdinandus agrees with Hippocrates, "Si non sanat medicamentum, sanat ferrum, et quod non sanat ferrum sanat ignis."

Le Cat, in his operation, allowed the canula to remain in the wound during the treatment.

7th December 1820.—The head, or, more correctly, the cranium, appears double the size of its natural magnitude; the superior sides of the parietal bones, where they form the sagittal suture, are so far removed from each other as to nearly admit two fingers; the frontal bone is equally removed from the parietal bones, and the halves of the frontal bone itself are also equally apart from each other; all contributing to constitute a very large bregma, or anterior fontanelle. The posterior fontanelles are proportionally enlarged by the separation of the temporal and occipital bones. The countenance has a disagreeable appearance: the unproportional forehead—the squinting and rolling of the eyes, with the largely dilated pupils—and the moving the enormous head from side to side—present an idiotical, melancholy scene.

10th.—To-day, in presence of Dr Duncan junior, Professor of the Theory of Medicine, Dr Campbell, and one of my pupils, Dr Moore, I pierced with a couching needle the anterior fontanelle in the angle, on the right side of the superior longitudinal sinus, carefully avoiding any cutaneous veins. From the conical figure of the needle, only about a tea-spoonful of fluid exuded. A cathartic was administered.

17th.—Nothing occurred from the puncture on the 10th. To-day, in presence of the same gentlemen, I pierced the same angle of the fontanelle with a delicate trocar and canula, and allowed to flow from four to five ounces of a clear, limpid fluid, stopping the flow in the middle for a few seconds. * The sides

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* The following is the analysis of this fluid by my friend, Dr Fyfe, Lecturer on Chemistry: The results of the experiments are,

A. On the addition of nitrate of silver, a copious white precipitate fell, which became black on exposure to light.

B. Nitrate of baryta also gave a white precipitate, insoluble in nitric acid.

C. Oxalate of ammonia rendered the fluid turbid, but ammonia itself did not occasion a precipitate.

of the cranium were supported during the flowing of the fluid by the hands of an assistant. The head was afterwards bandaged. By this manner of proceeding, we avoided the other dangers, excepting the admission of air, of which hereafter, mentioned by Dr Monro. The pupils instantly contracted, and the strabismus ceased. The child was given to the mother, with directions to keep the head in the horizontal posture, the same attitude in which it had been during the operation, viz. across the knees. She sucked greedily immediately after, and slept calmly in the evening. A cathartic was desired to be given, and the mother requested, in the event of seeing any flushing of the countenance, or restlessness, to immerse the child in the warm bath, up to the arms.

Tuesday the 19th.—Slept sounder, and passed a better night, between Sunday and Monday, than since she was born. Has passed an equally good one this last night. The head appears as large as on Sunday, and the squinting and dilated pupil have returned.

Thursday, 21st.—Yesterday, Dr Campbell was sent for, and he found a good deal of pyrexia present, with vomiting. The head appeared as distended as at first, and the reaccumulation seemed to be the cause of these symptoms, as the rest of the case will show. He ordered two leeches to each temple, a cathartic to be given, and the lower extremities to be immersed in warm water. To-day, we proposed repeating the operation, but the parents would not listen to it.

Monday, 25th.—The child having been easy for two days, and the parents having given their consent, I repeated the operation, and extracted four ounces of fluid. To-day, I introduced the trocar on the left side of the fontanelle; but, not having pushed it deep enough, the fluid did not flow so freely

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D. On the addition of lime-water, a white precipitate fell.

E. Muriate of mercury produced a copious precipitate.

F. To the filtered fluid of E. infusion of nut-galls was added, and no precipitate was occasioned.

G. Sub-acetate of lead (Goulard's extract) produced a copious precipitate.

H. On the application of heat, a coagulum was formed.

Of the above experiments,

A. indicates muriatic acid; B. sulphuric acid: C. lime, and the absence of magnesia; D. that lime is in union with phosphoric acid; E. and H. indicate albumen; F. the absence of gelatin; G. the presence of mucus.

The specific gravity of the fluid was, at 50 Fahrenheit, 1011.06; compared to water, 1000.

This fluid then appears, concludes Dr Fyfe, to be the same in its composition as the other watery fluids of the body, containing albumen, muriates, sulphates, and phosphates.

as formerly. In general, I introduced the instrument an inch from the integuments, but, to-day, only three-quarters. To prevent irritation being caused by the reaccumulation of the fluid, we appointed

Thursday, 28th.—Immediately after the last operation, she vomited. The bandages were allowed to remain until to-day. There did not appear any reaccumulation.—The operation, however, was repeated, and between five and six ounces were removed, which caused considerable collapse of the bones and integuments, and the child vomited. The bandage was applied as usual. From this day, a marked amendment took place: she sucked well, became more regular in her alvine evacuations, and slept sounder; could see distinctly, had a more natural physiognomy, and cried louder.

Sunday, 31st.—The operation was to-day again repeated, and about four ounces of fluid abstracted.

Friday, 5th January, 1821.—Yesterday morning the same epileptic fits occurred, as at the commencement of the disease, and apparently from the fluid irritating the brain by distention; the warm bathing of the lower extremities was prescribed by Dr Campbell, and a cathartic, after which no fit took place. The operation was repeated on the right side, and four ounces of fluid withdrawn; no vomiting followed this time.

Tuesday, 9th.—On Sunday last the 7th, she got the two mesial incisors of the lower jaw. Yesterday morning she had two epileptic fits of short continuance, and a third a little while before we called. The head was considerably less, and the anterior fontanelle greatly reduced—the anterior portion of the sagittal suture ossified, and where I had first punctured, was now bone, partly from ossification, and partly from the approximation of the frontal and parietal bones. The operation was done on the right side, and seven ounces of fluid evacuated. No vomiting followed.

Sunday, 14th.—On Thursday last, she had one or two slight epileptic fits. She was ordered half a grain of calomel night and morning, to induce absorption. To-day I pierced the fontanelle on the right side, and abstracted 7½ ounces of fluid, of a much darker colour, and of a thicker consistence. In consequence of the bones being now firmly united, pressure could not be used, and *air rushed in at the canula.* This last fact answers the remaining assertion of Monro.

Friday, 19th.—On Tuesday the child had several slight fits. This day I took away seven ounces of fluid, of the same dark colour. When I punctured, the air escaped with a hissing noise. I applied compression over the fontanelle.

Tuesday, 23d.—Fits attacked her again on the second day after the last operation. To-day, I could procure only two ounces six drachms of fluid, and during its flowing the air rushed in. As the calomel had purged the child rather too severely, it was left off.

Sunday, 28th.—To-day I drew off ten ounces of fluid. On Tuesday evening following, she was attacked with the fits, which continued at intervals till Wednesday morning. Ordered the warm bath and a brisk purge.

Sunday, 4th February.—She had no fits since Thursday; to-day I pierced on the right side, and evacuated three ounces and a half of fluid.

Thursday, 8th.—To-day I pierced on the left side, in the very same direction and manner as on any former occasion, but no fluid flowed; I moved gently the canula on every side and passed a probe along, which met with a soft resistance, and on examining the point a little serum was evident. On withdrawing the canula, no cerebral matter or any thing appeared within. No bad symptom followed this punctured wound, or the following.

Sunday, 18th.—To-day, conceiving there was a reaccumulation of fluid from the fluctuating feel, I made another fruitless attempt; even Dr Duncan and Mr Allan were equally deceived; nothing seems so difficult to acquire as the *tactus eruditus*, and nothing is so essential to a surgeon. There was more resistance in this puncture; a particle of cerebral matter was found at the wound and a little within the canula. A little blood dropped from the canula, while in the wound.

Sunday, 25th.—After the result of the last operation, I considered the child as cured, but Dr Duncan and Mr Allan's prognostications were too true. For these two days past, the child has been very fretful, crying night and day. Fluctuation was more evident than at our last meeting, and I therefore punctured on the right side; the fluid instantly flowed; but no more than four ounces were removed. The child was immediately relieved, and continued better. On Wednesday 28th, I repeated the puncturing, and took away five ounces.

Saturday, 3d March.—To-day, I first punctured on the left side, but no fluid flowing, I secondly punctured on the right, and obtained three ounces of fluid. This leads to the inference, that the left lateral ventricle, or the left side of the general cavity, is obliterated, I should suppose, by adhesion.

Tuesday, 6th.—No bad consequences whatever followed the double puncture. To-day, I punctured on the right side, and removed four ounces of fluid.

Saturday, 10th.—I was sent for this morning, and I found that the child had had several fits early in the morning. The fontanelle is puffed up, indicating a reaccumulation of the fluid. The gum over the incisive teeth of the upper jaw is inflamed and swollen. This I accordingly scarified, and then punctured the fontanelle on the right, and removed four ounces of fluid.

Tuesday, 13th.—The child has had no fits since Saturday, and every thing promises success, but we appear to make little progress, in consequence of the irritation of the teething.

This case illustrates several important facts. It shows us that hydrocephalus chronicus may be treated by operation, when cautiously managed—that the brain, the centre or origin of the nervous system, is insensible, as Wiseman formerly proved—that it is at the commencement of the deposition of fluids in the brain that irritation is induced—that when a large quantity is extravasated, provided it be gradual, the brain accommodates itself to the fluid, and no urgent symptoms occur, but only those which are the result of general pressure, as gradual paralysis. The next point to be considered, and of which this case is a strong analogical illustration,—is the propriety of operating in a similar manner in the acute hydrocephalus. I merely at present hint at it, and shall certainly reflect seriously upon it. I have been years before bringing the operation in the chronic to the test of experiment; the same time may elapse before the other be decided.

The gentlemen who have witnessed this case, in one or more of its operations, I beg to mention, as I find many scrupulous to believe that any operation has been done. "Truth scarce ever yet carried it by vote, anywhere at its first appearance. New opinions are always suspected, and usually opposed, without any other reason, but because they are not already common. It is trial and examination must give them publicity." Dr Duncan, jun. Professor of the Theory of Medicine, Mr Allan, Lecturer on Surgery, and one of the Surgeons of the Royal Infirmary; Dr Campbell, Lecturer on Midwifery; Dr Milligan; Mr Runciman, N. S.; Mr Scott, N. S.; Dr Moore; Dr Murphy; Mr B. Bell; Mr Tweddale; Mr Carnie, Surgeon, and several young gentlemen, pupils, either of Dr Campbell or myself.

6, *George Street*, 13*th March* 1821.

XIII.

Case of Hydrorachitis treated by Puncture. By Professor ANDREA VACCA. Communicated by CHARLES LOCOCK, Esq.

WELL knowing the high interest you take in any thing connected with the medical profession, I beg leave to offer to your notice the history of a case of hydrorachitis, which occurred last year at Pisa, in the clinical ward under Professor Andrea Vaccà. The early part of the case (previous to the beginning of October 1819) I had not an opportunity of seeing, but have related the particulars from a journal kept by one of the students, and partly from reports communicated by the Professor himself. From that time to the death of the patient I was a witness of every circumstance I have mentioned, and was also present at the dissection of the body.

Admitted, November 20th 1818, into the clinical ward, Pisa, Anna Barzelti, six years of age, of a sickly habit, affected with atrophy, and paralytic in the lower extremities. She has had from birth a tumour, situated between the last lumbar vertebra and the first portion of the os sacrum; the tumour was of an oval form, soft, circumscribed, containing a fluid, with no discoloration of the integuments over it, and about the size of a common orange. Upon compressing the tumour the fluid retired by mounting through the spinal canal, causing at first general uneasiness, and afterwards temporary apoplectic symptoms, as long as the pressure was continued; at the same time the alvine dejections and urine came away involuntarily. The right leg was also bent and drawn towards the thigh, and the corresponding foot was so situated, that the sole, instead of being turned downwards, was directed upwards, and the upper part of the foot projected outwards and downwards. On this account, as also from the paralysis and general weakness, the child was obliged to slide along the ground by the help of her arms and nates.

Upon the 28th of November, Signor Vaccà cautiously punctured the tumour by means of a cataract needle, and there escaped a fluid, rather dense, to the amount of four ounces, (Tuscan.) Straps of adhesive plaster were then applied over the tumour for the purpose of making constant pressure, which were retained there through the whole course of the treatment. * On the

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* The following account of the fluid is by Signor Branchi, Professor of Che-

5th of December, the fluid having again collected, the puncture was repeated, and a liquid was drawn off analogous to the former in quantity and quality. The patient had a slight degree of fever afterwards, and passed a restless night, but by the morning was quite recovered. A nutritious diet was ordered. On the 12th the operation was again had recourse to, with the same result; the fluid being, however, more mixed with blood; a slight attack of fever followed, but quickly retired. On the 18th the fluid was again discharged. At this time the fever was rather more severe, and there was slight delirium in the course of the night, but the next day she was quite recovered. On the 24th the puncture was made for the fifth time, when the discharged fluid was more turbid and only two ounces in quantity; no inconvenience followed. Her diet latterly had been ordered to be of better and more nutritious food. On the 6th of January 1819, the tumour being again distended, the fluid was again evacuated, in quantity two ounces and a half, and of a bloody colour. On the 15th the operation was repeated with the same result. On the 22d three ounces of fluid were let off, of a bloodier appearance than before, although, on this occasion, the tumour had been punctured in the posterior part, where there were no traces of vessels ramifying. In place of the cataract needle, which had been now used eight times, a needle of the diameter of a line in the thickest part was employed, and the tumour was again punctured on the 12th of February, when the usual quantity of the same fluid was discharged, without the least inconvenience. On the 25th of February, and on the 13th, 19th, and 30th of March, and on the 16th of April, the operation was repeated with similar effects. It was rather about this time that the patient began to appear stronger and plumper, and the paralytic extremities began to be capable of motion. Encouraged by this success, the Professor endeavoured to straighten the distorted foot by means of a small instrument recommended by Scarpa,

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mistry in the University of Pisa:—" The fluid was of a slightly reddish colour; upon standing it became limpid, and had a sensibly saline taste. It was not coagulated by the action of concentrated sulphuric acid, nor by that of alcohol, although the latter caused a slight precipitation of whitish flakes. The addition of nitrate of silver produced a copious white coagulation. The action on test-paper gave slight indications of the presence of an alkali. It became turbid from the addition of oxalate of ammonia. It was not coagulated by heat. Upon evaporating to dryness it left upon the sides of the vessel a minute layer of whitish matter; and, upon stopping the evaporation before dryness, small crystals, spontaneously formed in large quantities, of a saline taste, from which hydrochloric acid was evolved, upon adding a few drops of concentrated sulphuric acid."

and in a short time she was able to walk freely. However, the fluid was again collected, and upon the 19th of April was let off, appearing rather thicker than before. The fluid was again evacuated on the 26th of April, on the 15th and 25th of May, the 16th of June, and the 21st of August, and the 22d of September. By this time the child had become healthy in appearance, cheerful, and strong; hopes of a complete cure were entertained, although the constant reproduction of the fluid rendered it very uncertain. At this time I first saw the patient. On the 29th of November, at seven in the morning, the tumour being again distended, the Professor made a puncture, and the fluid was evacuated of the accustomed quality and quantity. The child continued perfectly well till the evening of the 2d of December, when she was attacked with fever, but as she had a white tongue, it was at first supposed to be caused by a foul state of the bowels. She was ordered four grains of calomel, and a flask and a half of lemonade for drink. The medicine produced no evacuation by the next morning, the 3d; and on their examining the tumour, it was found painful on being touched, red, and having an erysipelatous appearance. There was unusual sensibility along the tract of the spine, but no paralysis of the inferior or superior extremities, or any alteration in the intellectual faculties. Six grains of calomel and an enema were prescribed, which produced abundant fetid dejections, with a slight relief to the symptoms. Two leeches were also applied near the tumour, but without benefit. An antiphlogistic treatment was pursued till the morning of the 5th, when the tenderness of the tumour and spine continuing unabated, and if any thing increased, four more leeches were applied. On the 7th, a blister was ordered to the nape of the neck, but without relief. The abdomen was also fomented. On the 8th, the symptoms were evidently worse, and the antiphlogistic treatment was steadily pursued. On the 9th, she was much as the day before, lying quiet, moaning a little, but answering questions collectedly, another blister was applied to the neck. On the 10th, stupor, dilated pupils, and a complete depression of strength came on; a blister was applied to the spine, and cordials were exhibited. On the 11th, the comatose state was increased, and she died in the afternoon, *but without ever having had any appearance of convulsions.*

The next morning, on inspecting the body, the appearances were as follows:—

The external integuments of the tumour were sound, but of a dark red colour. Upon exposing the brain and the whole length of the spinal canal, the enveloping membranes were found to possess an healthy appearance, no redness or gorging with blood was visible. The membranes of the brain being removed, and the two hemispheres sliced away, so as to expose the centrum ovale, their substance was found perfectly healthy. Upon opening the left ventricle, it was found full of fluid and much enlarged, whilst the right contained only a small quantity; but as the ventricle itself was as dilated as that of the left side, it may be supposed that it had contained as much fluid as the other.* The fluid in the two lateral ventricles communicated with fluid contained in the third, from whence it passed into the fourth ventricle, from which it reached the spinal canal by an orifice not observed in the healthy state, and probably formed by the breaking through the adhesions of the pia mater and the choroid plexus, which close up the fourth ventricle at the lowest part, and, by that means, communicated with the fluid contained between the pia mater and the medulla spinalis, which was the same that entered the tumour on the sacrum. On pressing the tumour, after having slit open the dura mater surrounding the spinal cord, the pia mater was seen to swell up, and to give passage to the fluid, which mounting, the pressure being followed up, entered the ventricles of the brain. The pia mater being cut open, a quantity of thickened pus, resembling much coagulable lymph, was seen coating the internal surface of that membrane, and the external of the medulla spinalis for a great extent, and the fluid in the sheath was partly mixed with pus. The tumour below was found to be formed of a process of the dura and pia mater, and was surrounded by cellular membrane and the common integuments, so as to have its parietes nearly a quarter of an inch thick. The tumour was filled with a thick, partly purulent, fluid; the tumour proceeded outwards from the spinal canal, through a deficiency of one of the spinous processes of the last lumbar vertebræ, and by an hiatus in the first portion of the os sacrum. The spinal cord seemed smaller than usual; its membranes in some parts were gorged with blood, and evidently in a state of inflammation.

The viscera presented nothing remarkable on their examination. These are the symptoms of this interesting case, which I can confidently state to be correct. I can only remark, that the efficacy of the practice introduced by Mr Astley Cooper appears to be completely confirmed; for although the termination in this instance was fatal, yet I very much question, whether the last puncture was the cause of the symptoms of inflammation of the medullary membranes producing death, since, if the puncturing had been hurtful, the bad effects would have followed the first attempt, or perhaps the ninth, when the larger needle was employed, and would scarcely have come on after the operation had been safely performed upwards of twenty times. In this case, for nearly a twelvemonth, the patient was restored from a state of paralytic impotence to bodily activity, and comparative freedom from complaint.

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* As the child, the last few days, constantly lay upon the left side, this may be easily accounted for.

The total absence of convulsions towards the termination of the disease, appears a remarkable deviation from cases of inflammation of the membranes of the spine, as generally described.

21, *Lothian Street, November* 25, 1820.

XIV.

Case of Concussion of the Brain. By John Richardson, Member of the Royal College of Surgeons, London, Licentiate of the Society of Apothecaries, &c.

On the evening of the 5th of January, I was requested to visit Mary, the wife of John Sheiridan, (private in the 4th Royal Irish Dragoon Guards,) æt. 23 years, who had fallen from the top of a flight of steps on the pavement, distance about three yards. Being particularly engaged at the time, my assistant accompanied the messenger, and found her labouring under symptoms of concussion of the brain. He immediately bled her to the amount of a few ounces, and ordered the following:

Subm. hydrargyri gr. vj. statim. stat.

℞ Sal. cath. ℥viij. cujus cap. ℥ij. 2dis. horis donec purgaverit.

6th A. M.—I visited her, and found her lying quite insensible. On examining her head, found she had struck the pavement with back part of the head; pulse 48 and intermitting; pupils contracted; had vomited twice during the night; medicine not operated; ordered her head to be shaved, and folded cloths to be kept moist with vinegar and water, constantly applied; leeches to the temples, and blister between the shoulders.

Cap. statim. gr. vj. subm. hydr. in forma boli et cochl. ij. magn. Inf. seq. donec purgaverit.

℞ Sulph. mag. ʒiss. Mannæ opt. ℥ss. Fol. sen. ʒiij. Sem. coriand ʒij. Aq. bullientis ℥ij. Infunde per horam, et cola, cui adde Tinct. Sennæ comp. ℥ss. M.

Vespere.—Keeps crying out of pain in the neck, perhaps from the effect of the blister, which appears to rise well; medicine operated twice; stools black and very fetid; pulse 50 and intermitting.

Contin. Inf. aper. ut antea.

7mo, *mane.*—Applied her hand constantly to the left side of her head during the night, and shrieked frequently. Appears better this morning. Answers questions when put to her, but rather impatiently. Pulse 60; tongue white; no stools since last night. Complains of intense pain in the fore part of the head, and is very thirsty. To take toast and water as common drink.

℞ Subm. hydr. gr. v. Pulv. antim. gr. iij. Conserv. q. s. ft. bol. statim. sumendus.

Contin. Inf. aper. Appr. Vesic. magn. capiti.

Vespere.—Has had four copious evacuations of a black appearance, and of a very offensive nature; says the pain in her head is much better since medicines operated.

8vo, *mane.*—Slept little during the night, and appears rather feverish this morning. Blister rises well; says the pain in her head is better; had several evacuations during the night; pulse 58 and soft; tongue white.

Capiat ℥j. Julep. salin. 3tiis horis: et cap. ℥j. Inf. aper ter die.

Vespere.—Has had three stools in the course of the day of a better appearance, and feels much better.

9no, *mane.*—Complains of a smarting sensation about the mastoid process of the temporal bone. Upon examination, found a slight erysipelatous blush; in other respects continues better.

Contin. Inf. aper.

Pulse 60; milk diet; found considerable relief after each evacuation. From this time she continues recovering daily; she takes the aperient mixture occasionally, and a saline draught. She had an infant at the breast seven weeks old, which she continued to suckle during her illness.

This case is chiefly interesting, as showing the beneficial effects of a steady administration of purgative medicines in similar cases; no amelioration of the symptoms being observed until the bowels were freely evacuated.

Leeds, 10*th February,* 1820.

XV.

Obervations on Inflammation. By WILLIAM NEWCOME RYLAND, Member of the Royal College of Surgeons, London

THE attention of practitioners has been of late years much attracted towards the subject of inflammation, and its consequence in disease has been more strongly perceived, and many improvements in the history and treatment of diseases, before the most obscure, have followed. Still no general foundation has been laid—no regular invariable rules fixed—and much uncertainty still remains as to the division and treatment. The present division into Phlegmonous and Erysipelatous is productive of many disadvantages, and does not fix the nature and seat of the affection sufficiently to enable the practitioner to lay down regular rules of treatment. We hear at one time of bleeding being strongly recommended, with the local use of warm applications, while others say that bleeding is seldom necessary, and trust to cold applications.

Until of late years the internal inflammations were but in few instances noticed, and their varieties not at all attended to. Some of their productions were grossly misunderstood; witness the layers of coagulable lymph exuded on the inner surface of mucous canals, which, when separated, were supposed to be the inner coat of the canal itself. The difference of the kind of inflammation is generally attributed to the variety of constitution of the patient; and it is said, that some inflammations will not bear evacuations of blood, because of the peculiar habit of the patient; but an attentive consideration will show, that the constitution merely renders certain parts or textures more liable to be affected than others, and that the same species of inflammation always affects those parts, and is always benefited by the *same treatment.*

Inflammation is known to have its seat in almost every texture of the body, and in every part of the same texture, whether cutaneous, cellular, serous, or others;—the kind of inflammation is even the same, whether this texture is seated in the upper or lower, inner or outer parts of the body, varying only in symptoms arising from sympathy of contiguous parts, or of those connected by the intermedium of nerves. The illustrious Bichât,—that star of his age, whose premature loss should be mourned by every nation,—has done so much in explaining and fixing the different textures of the body, that it is only to give local diseases a similar adaptation, to produce all the benefit which he seemed to aim at, but which, singular to relate, has not yet ensued. Broussais's work on Inflammatory Diseases, though containing a large mass of valuable cases, is confined to the medical branch, and his views of treatment are so fettered by the prevailing theories of the French school, that its benefit is very confined. Still it is impossible to read the work without remarking the benefit that accrues from physiological classification; in fact, of treating diseases according to the nature of the part, instead of the irregular and uncertain method arising from habit, mode of life, or clime. The several textures of the body are very distinct, and their diseases are in the commencement equally so, and often remain confined to them alone for a long time. Nothing is more common than the extension of a disease from one end of the body to the other, along one texture, without communicating its effects to the neighbouring texture. The effects of the exposure to cold on the mucous surface afford a good example of this. In a common catarrhal affection, the surface of the eyes becomes uneasy and painful, producing a copious discharge of the natural moisture, and this extends along the nasal passages, down the fauces, and occasionally (where there is much constitutional susceptibility to mucous inflammation) along the stomach and alimentary canal, where it gives rise to those well-known affections, according to its intensity. At present it is sufficient to point out a few of the advantages to be derived from this method; at a future period, if they seem to deserve a place in your Journal, I shall transmit some more particular details.

The capillary vessels are those which form the seat of inflammation in every part, and should therefore be particularly described, and an exact description of the changes that arise in them from that affection should be pointed out. This would lead to a general history of suppuration, mortification, and of the production and immediate cause of heat, redness, tumour, and pain.

After the general history should follow the particular history of each texture, commencing with an anatomical and physiological account of each; the habits of body of those persons who are most subject to it; the clime or temperature of the air most predisposing, and its peculiar tendency; and a description of the varieties of inflammation of that texture; concluding with the means of cure.

The textures most frequently affected by inflammation are the mucous, cutaneous, cellular, serous, and fibrous.

For fear of encroaching too much on your valuable pages, I shall merely select a few remarks, illustrative of the distinctness of some of the affections of those, and of the equally distinct mode of treatment required; premising, that, as inflammation in general is an increased action of the capillary vessels, when this affection of a part produces increased capillary action over the whole system, bleeding becomes necessary to lower this, and to reduce the case to one of local inflammation, in whatever texture the original inflammation may be.

Cutaneous inflammation most frequently attacks persons of that peculiar habit which is subject to irregular action of the biliary system, and thence called bilious. It is more prevalent in warm weather, and is accompanied with more sympathetic affections than any other, arising from the strong sympathies that exist between the skin, and the stomach, brain, and lungs. It is the same whether it affects the head, body, or extremities. In each part it produces similar symptoms from sympathy, particularly of the head, liver, and alimentary canal; and, when it does produce fever, it seems to have that effect more from derangement of the alimentary canal, than through the medium of the nerves or circulation.

Therefore erysipelas rarely requires bleeding, except from supervening serous inflammation, when it has severely attacked the head, or when it is extensively diffused. It is always benefited by intestinal evacuation, and by the occasional application of mild, luke-warm, local applications. Much difference of opinion has arisen as to the propriety of the use of the latter, arising apparently from the want of proper attention in their application. If they are applied in the form of poultice, the irritation of their weight more than counterbalances the advantage derived from their soothing power; and if they are continued too long, they produce too great a discharge of serum from the cellular surface beneath. But if they are applied frequently, for a short period each time, and of a temperature regulated by the feelings of the patient, they sooth the irritation of the nerves, and moderately promote the discharge, which diminishes the inflammation. Checking the discharge entirely, by the application of powders, at least until the inflammation has in some degree abated, is injudicious. The discharge is merely an effect of the inflammation: when that ceases, it seldom continues. The advantage of evacuating the bowels freely is in no case more clearly shown than in this, of inflammation of the cutaneous surface. The class of purgatives which answers this purpose best are those which act upon the upper part of the intestinal canal, and from thence solicit a free evacuation of bile, as calomel, neutral salts, &c. The next example which seems best adapted to showing the advantage of this classification, is inflammation affecting the serous textures: first, because its phenomena and treatment are very different from those of the former; and next, from its being attended with fewer nervous sympathies than any other. Inflammation of the serous membrane of the head, chest, and abdomen, often goes through its course without giving rise to disorder of the organs in either of the cavities, except of that in which it is itself situated. It is evident, when the inflammation is so violent as to produce general fever, it must affect them, but not in the same manner as cutaneous inflammation. Even peritonitis, though it causes obstinate constipation from contiguous sympathy, (or rather from stimulus communicated to the muscular coat,) and also vomiting, is not attended by any of those symptoms denoting a deranged state of the digestive organs. In pleuritis, and in inflammation of the pia mater, this is still more evident, both of them generally occurring without any such effect.

The effects of the inflammation on this texture differ much according to the intensity. A slight degree merely produces an increase of the natural vapour, sometimes amounting to a fluid, as in the production of dropsy; this is most frequently observed in the head, and in the cavity of the tunica vaginalis testis. A greater degree is followed by the effusion of lymph, and the violence continuing unabated, vessels shoot into this lymph, and take on the purulent action. The two last are most clearly exemplified in the cavity of the pleura; within which a copious collection of pus has been known to take place, without producing disorder of the head or digestive organs. It is almost unnecessary to say how absolutely necessary bleeding is to the cure of this species; it being now generally acknowledged, by all judicious practitioners, that as long as any pure fever continues, before disorganization takes place, (and even then, if the vessels can be considered to be still pouring out lymph,) to be our chief anchor.

It can scarcely be considered as encroaching on the province of the physician, to turn over to the surgeon those affections which he is so frequently called upon to attend, and from his necessarily stricter anatomical knowledge, so peculiarly fitted to study; it is only singular that they should ever have been separated.

XVI.

Case of Painful Subcutaneous Tumour, in which the Tumour was penetrated by the Twig of a Nerve. By JOHN WINDSOR, F. L. S. Member of the College of Surgeons, and one of the Surgeons to the Manchester Eye Institution.

IN the 8th volume of the Edinburgh Medical and Surgical Journal, there are two papers by William Wood of Edinburgh, on the subject of a very troublesome affection, which he has named "painful subcutaneous tubercle." In the 11th volume of the same work, a case of the same disease is also related by Dr Marshall Hall. I am induced to publish the following case, from observing the tumour to have been penetrated by the twig of a nerve, a peculiarity which does not appear to have been noticed in the cases related in this Journal, but which may be thought to illustrate in some degree the nature of this affection.

The exquisite and painful sensibility of these tumours is indeed the most remarkable part of their character, and seems to imply some particular connection with the nervous system.

In one of the three cases related by Cheselden, (p. 136, Ed. 11th of his Anatomy,) the tumour, situated on the nates, is described to have been only the size of a pin's head, and yet the pain from it was so severe, that the patient could not set his leg to the ground, nor turn in bed, without the greatest suffering.

In the other cases which have occurred, the pain appears to have been nearly of the same most acute kind.

Though this affection has not escaped the attention of several observers, the real nature of it seems hitherto to have, in a great measure, eluded their remarks, or at least to require further attention.

Camper, indeed, mentions the attachment of these tumours to the cutaneous nerves, and the following case seems to corroborate this part of his description. He also says, that they are real ganglia, and situated within the coats of nerves; but this opinion probably requires further confirmation.

Mr Wood remarks, "That the disease is intimately connected with the nervous system, I think there can be little doubt from its symptoms; but I conceive, that more frequent and more accurate examinations of the structure of the morbid part are still wanting, to enable us to ascertain in what way the connection is formed."

9th month, September 1st, 1820, I was applied to by Ann Knolt, æt. 59, on account of a small tumour, situated immediately under the integuments, on the thonal and radial aspect of the arm, three and a half inches above the wrist, moderately loose to the feel, but most exquisitely tender to the touch. It is about the size of a large pea, or nearly that of a horse-bean, and to the feel of considerable hardness, but she complains very much on touching it. The integuments over it appear healthy, but there is some appearance of a bluish discoloration in the part. She has no pain in it except when it is accidentally touched, and that is followed by the severest pain for several hours, sometimes accompanied with faintness, and with a feeling of heaviness in the parts. On these occasions the pain extends from the part towards the trunk, but not downwards towards the fingers.

About eight or nine years since she had a pleurisy, for which she was bled in the arm three times then, and has occasionally been bled since. It was soon afterwards, and before she was perfectly recovered of her illness, that she felt a soreness in the present site of the tumour when it was touched, as if she had received a blow in the part, but nothing could be seen for two or three years after that time. About six or seven years since she perceived a very small swelling, scarcely larger than a pin's head, which has gradually increased to its present size; for the last twelve months it has not, she thinks, enlarged.

To remove it I made a small single incision over the centre of the tumour, then dissecting back the integuments a little on each side. I cut round it, and removed it. In doing this a small artery bled freely, obscuring the part. The tumour was apparently of the encysted kind; it was nearly all removed, but a small portion remaining, it was next taken away. In doing this a filament of a nerve was observed going to the part. I cut this away also for the length of an inch, which was followed by a sensation of numbness in the part, so that she said she could scarcely feel any thing in it for a short time. On laying open the small tumour removed, I found its contents consisted of a number of granules, quite gritty or earthy to the feel.

The edges of the incision were approximated by adhesive plaster; they did not unite entirely by adhesion, but the part was healed in about a fortnight.

Upon considering the case, it does not appear to me improbable, that, in one of the bleedings, of which she had undergone many, or from some similar cause, a branch of a nerve might have been injured. She does not, however, now recollect suffering more particularly at any one time.

Supposing it, however, to have occurred, it seems likely to have given origin to a disordered action in the course of the nerve, in the vessels and parts supplied by the filament, and hence, perhaps, the source of the tumour. This opinion seems to be rendered more probable from the very highly sensible state of the swelling; from a nerve being seen entering its substance; perhaps, also, from the remarkable nature of the contents, which seemed to be to the feel chiefly of an earthy nature; and from the pain shooting upwards in the arm, in the direction of the nerve, not downwards towards the fingers.

In this case it may be remarked, that the pain did not come on spontaneously in paroxysms, but was, as before observed, always severely excited by any thing touching the part.

The little tumour, along with the nerve which penetrated it, I preserved, and have had an opportunity of showing it to my friends Dr Hull, Mr Wilford.

Manchester, 9th Month, September 30th, 1820.

XVII.

Ganglion at the Wrist mistaken for Aneurism. By JOHN BURNE, Jun. Esq.

A YOUNG lady, residing at Ardres, in the north of France, requested my opinion concerning a tumour, which had been forming at the wrist for a considerable time.

The figure of the tumour was somewhat oval; the situation exactly in the course of the arteria radialis, being in front of the base of the radius, and extending transversely from the apophysis styloides of that bone to the tendon of the flexor carpi radialis. In this direction was its longer diameter. It had an evident and general pulsation; it entirely disappeared on the application of firm pressure, and, on the removal of it, reassumed its former size.

The situation, the general pulsation, and, above all, the disappearance of the tumour on pressure, decided me at once to pronounce it an aneurism, and to advise the lady to submit to the operation, as the only means of cure.

Several surgeons of Calais, of Ardres, and of St Omer, had been consulted; they all gave a similar opinion.

The lady, anxious to get rid of the swelling, although neither painful nor troublesome, consented, without hesitation, to the plan recommended. Happily, however, both for the patient and for myself, her friends were opposed to it, and the operation was, in consequence, delayed.

I now quitted Ardres. At my return thither, after an absence of seven months, I again saw the tumour; it was rather enlarged; in other respects the same. On regarding its surface, after having raised it to a level with my eye, I discovered a slight elevation of the integuments, with pulsation in one particular part; and, from an attentive and minute examination, two arteries were distinctly perceived passing over the tumour, and immediately under the skin. They were the arteriæ radialis and superficialis volæ.

The swelling now evidently appeared like a ganglion, probably of the theca of the tendon of the flexor longus pollicis manus, on which lies the arteria radialis. The gradual enlargement of the ganglion seemed to have raised the arteria radialis from its natural situation. The trunk and course, both of this artery and of the superficialis volæ, were readily seen and traced. That of the former directed outwards to pass under the tendons of the extensor ossis metacarpi pollicis, and of the extensores primi et secundi internodii pollicis. That of the latter directed inwards, and descending in front of the ligamentum annulare anterius carpi. The origin also of the superficialis volæ was discernible; it was just before it gained the tumour.

The passage of the two arteries, in different directions across the ganglion, explained the cause of the pulsation being general; and the reason also why the swelling disappeared on being firmly compressed was, that pressure forced the contents to pass into the theca of the extensor longus pollicis.

Being now sensible of the error into which we had all fallen, I sent the lady to one of the surgeons, (Monsieur Ballard, a very intelligent gentleman of St Omer,) whom she had previously consulted, with a letter, apprizing him of our mistake, and enumerating the reasons for considering the tumour to be a ganglion. My communication was delivered to him on the evening of the lady's arrival at St Omer; she herself did not wait on him until the following morning; and so decidedly was Monsieur Ballard of opinion that the enlargement was an aneurism, that my letter failed to convince him of the contrary. Immediately, however, he had seen the patient on the morrow, and had examined the tumour, he was perfectly satisfied of its nature being as I described. In his reply he observes,

"J'ai lu votre lettre sans etre encore persuadé de votre opinion. L'examen de la jeune malade, que jè n'ai vue que le lendemain, m'a entièrement tiré d'erreur, et nous sommes fort heureux, vous de n'avoir pas, en Juillet dernier, fait l'operation, et moi de l'avoir fait retarder jusqu'en ce moment; puisque c'eût été une opération qui n'eût eu que les plus tristes résultats par son inutilité. Agréez, Monsieur, mes compliments sur la réparation de notre commune erreur. Je pense comme vous, qu'avant la consolidation du ganglion, il est peu d'hommes de l'art qui n'y eût été trompé. Si vous en faites l'objet d'une observation dans les journaux Anglois; je le citerai aussi dans les recueils de médecine de France, et rappellerai avec honneur votre nom," &c.

(Signed) Ballard.

Edinburgh, 25*th April* 1820.

PART II.

CRITICAL ANALYSIS.

I. II.

I. *A Practical Treatise on the Diseases of the Eye.* By JOHN VETCH, M. D., F. R. S. E., &c. &c. London, 1820. pp. 268.

II. *A Synopsis of the Diseases of the Eye, and their Treatment; to which are prefixed, a short Anatomical Description and a Sketch of the Physiology of that Organ.* By BENJAMIN TRAVERS, F. R. S., Surgeon to St Thomas's Hospital. London, 1820. pp. 425.

IT has been well remarked by one of the authors now before us, that the attempts made in this country to place the knowledge of ophthalmic diseases on an equal footing with the advanced progress of pathological science in general, may be regarded as the event of the passing day. To Messrs Gibson, Ware, and Wardrop, great praise is due, for the share they have had in promoting this desirable event; but it is to our emulation of the schools of Italy and Germany, and to the labours of the late Mr Saunders, that we principally are to attribute the present improved state of British ophthalmology.

The ancient Egyptians appear to be the first who divided the art of healing into as many distinct branches as there were diseases or organs of the body; they had their Oculists and their Aurists, their Liverists, their Spleenists, and their Stomachists; their cutters for stone, and their cutters for corns. Among this extraordinary people, however, there is every reason to suppose, that the practical part of medicine and surgery was at a very low ebb, notwithstanding the eclat with which their priests taught these sciences in the temples; indeed, if we investigate the history of our profession, we shall invariably find, that in all countries, in proportion as subdivisions have been multiplied, and individuals have devoted themselves to some one of them, to the exclusion of all others, while they have, at the same time, neglected to cultivate both the philosophy and the details of the profession at large, they have dwindled into mere artists, and, in innumerable instances, have descended to the lowest tricks of empiricism; while, on the other hand, some of the brightest ornaments of medicine and surgery are to be found among those who, fundamentally grounded in all parts of these sciences, have directed their attention more particularly to one point.

No class of seceders from general practice have entailed upon themselves the charge of Charlatinism more than the oculists. Whether they have been prompted in their selection by the never failing source of employment, the immediate profit, or the contingent advantages to be derived from the patronage of the rich and the powerful, we shall not attempt to determine, but that it has not proceeded from the abstract love of science, will be obvious to those who know the tenacity with which this class of persons conceal their methods and their self-denominated discoveries, so long as it is their interest so to do; a calculating selfishness altogether incompatible with professional zeal.

It was at one time our intention to have laid before our readers a chronological and critical sketch of the history of ophthalmic surgery in England; but we found that so small a portion of pleasure or profit could be derived from the brief abstract to which we must necessarily have confined ourselves, that we relinquished the plan, and must be content with offering a few cursory notices of the early English oculists.[*] The first of these was Read, who published in 1706, and who was followed in succession by Cowand, Kennedy, Duddel, and Taylor. A perusal of their works will establish the justice of the opinion we expressed in the commencement of this paper. Every one of these individuals obviously wrote in order to spread his own fame by announcing his own cures; pretensions the most extravagant, and a spirit of pugnacity the most unrelenting, are to be traced throughout the whole of their productions. Jealous of each other, they are unanimous in depreciating the members of the profession at large, and whenever they have occasion to speak of them, they display, as Haller observed, "subtiles cavilli et meliorum reprehensiones, absque novo invento." We believe we may with justice affirm, that every original proposal of the smallest intrinsic importance, and every sound pathological view with regard to the treatment and operations on the eye, have proceeded from men eminent in the general practice of their profession: from such men as Daviel in France,* or Cheselden or Pott in England; but men of this stamp were intolerable to the oculists; and Dr Peter Kennedy, the individual to whom Haller alludes, attached to his "Ophthalmographia," a supplement, considerably larger than the work itself, to convict Cheselden, Porterfield, and Sharp, of plagiarism and ignorance!!

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[*] A Treatise of the Eyes, by Sir W. Read, Knight. 8vo. Lond. 1706. Ophthalmiatria, by W. Cowand. 8vo. Lond. 1706. Ophthalmographia, by Peter Kennedy. 8vo. Lond. 1713. A Treatise on the Diseases of the Horny Coat of the Eye, and the various kinds of Cataracts, by Benedict Duddel. 8vo. Lond. 1727. Taylor's works are numerous: his first English work was published at Edinburgh in 1749, folio; it is entitled a Catalogue of 243 Diseases of the Eye, with coloured plates, very poorly executed. Woolhouse published a "Catalogue of Instruments" in French at Paris, 1696, and continued writing till 1723, but we possess no original work of his in English. Besides these authors, O'Halloran, Warner, Hill, Rowly, Chandler, Marat, Degravers, Wallis, and Wathen, wrote between 1750 and 1798, when Mr Ware published his

The older oculists, some of whom were females, appear to have been "ex professo" itinerants; and it is not a little ludicrous to hear one of them (Duddel) explaining "why certain pretenders" recommend the spring and autumn as the only proper seasons for couching, because, says he, "at those times, it is most convenient for themselves to travel." Numbers of these persons at once exchanged the scissars, or the last, for the couching-needle, but others had some superficial, surgical, or pharmaceutical information, and completed themselves as oculists on the Continent. Kennedy and Duddel were pupils of Woolhouse, oculist to the abdicated James, who resided at Paris, and lived to a very advanced age, engaged in perpetual professional squabbles with all around him. One of his favourite instruments was a scarificator made of beards of barley, and this was very extensively used by Duddel in England. Duddel's book, not-

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Observations. The works of some foreign authors were also translated, the best of which were those of St Yves and Richter.

* Daviel was a naval surgeon, of great industry and talent. He lectured on surgery and anatomy, and distinguished himself during the plague at Marseilles, by his indefatigable exertions to alleviate the horrors of the disease. It is no small praise to say, that Daviel was correspondent and friend of Haller.

withstanding many practical errors, contains various cases, from which he appears to have had more caution than many of the modern oculists, and to have weighed the probable advantages to be gained by his operations, before he attempted them.[*] Kennedy's book contains a very short and defective account of the diseases of the eye, with a still shorter and equally defective appendix on those of the ear. Of Cowand's work, we know only the title. The excursions of the Chevalier Taylor extended over most parts of Europe, and some of Asia. This oculist was at the head of his craft for nearly forty years; and, between 1735 and 1764, a vast number of his works were published in almost every European capital. They were generally in the style of advertisements, interspersed with flattering testimonials of his skill. Of these last, he published a numerous collection at Amsterdam, in 1749, purporting to contain the opinion of the principal universities of Europe; among these, the Portuguese and Spanish documents were the most laudatory, and, from the state of science in these countries, they were about as valuable as similar documents from the "Nobility, Gentry, and Members of Parliament," which clearly testify to the infallibility of the empirics of our own day. Taylor, among other exploits, pretended to possess the secret of drawing off the effete and turbid humours of the eyes of old people, and replacing them with fresh and youthful fluids. This secret, however, was not confined to him exclusively; for Woolhouse, Burrhius, and Kirkringius boasted of the same. We have seen some manuscript accounts of his operations by an eye-witness, from which it would appear, that his dexterity was very great, but that he took, or appeared to take, almost incredible liberties with his instruments. In one of his operations, he is stated to have twirled about the couching-needle in the interior of the eye with as little ceremony as if he had been poaching an egg. The Chevalier illustrated his works with coloured figures, and he exhibited models of the diseases in painted glass or enamel, a method since adopted among the French and other foreign artists.

One of the most highly honoured of the early English oculists—if, indeed, his titles were not of his own creation—was Sir William Read, knight, "her Majesty's oculist, and operator in the eyes in ordinary." Where he received his education, or whether he ever travelled beyond the precincts of these islands, are points of which we are ignorant; but he informs us, in his Treatise of the Eyes, that he performed sundry cures in the Universities of Oxford and Cambridge, at Edinburgh, Glasgow, Aberdeen, St Andrew's, Dublin, &c. Some of these were witnessed by noblemen, high in rank and office, who appeared to have patronized him. Of this connection with the great he appears to have been not a little proud; and in the detail of his cases he informs us of operations performed on the daughter of Sir Robert—on a patient procured by my lord's butler—and on a certain lady, "whose name he is obliged to conceal." Among his cures he seems to have valued himself greatly upon that of a soldier of her Majesty's Horse Grenadiers, from whose eye, he extracted a cancerous excrescence, that had for thirteen years "resisted his own surgeons, and the rest of the profession," &c. &c. Read also pretended to be in possession of a wonderful styptic, and an aqua ophthalmica of great virtue; but notwithstanding these and other empirical advertisements, there are some curious facts to be collected from his book. Of these the most remarkable is to be found in the twenty-first chapter, "Of small excrescencies of flesh in the eyelid, or mulberry, called in Greek Plactarotes and Sarcoma, in Latin Morus." p. 95. The cure of these granulations by excision and caustic, concerning the invention of which we have of late heard so many claims, and so much clamour, is distinctly described, and without any comment, which could lead us to suppose that it was out of the usual routine of practice. "Concerning the cure," he observes, "if they be thick and gross, they must be cut away dexterously with the point of a lancet, and afterwards let the place be touched with a little fine salt, alum, or copperas water, applying also such medicines as may dry the eye without great pain." Among the other remedies of those days were "the white of hen's dung," "the juice of goose's dung," and the insertion of a living louse, "which tickleth and pricketh, and rendereth the eye moist and rheumatick."

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[*] Speaking of one unfortunate operation, he says, "It would have been much better to have left his eye untouched, than to have given him light for three months, and reduced him for the rest of his life to darkness." Treatise, p. 196.

With scarcely any change, except some modification of the instruments and external applications, or some small difference in the ceremonial of their manipulations, and without contributing to either the improvement or the respectability of the profession at large, the exclusive oculists of England remained, throughout a very considerable part of the eighteenth century. The majority of them were bold and ignorant men, possessed of some manual dexterity, but grossly deficient in all the other qualifications which rendered an operator valuable. Fortunate as those frequently are, who, through habit and fearlessness of consequences, venture every thing, many of these persons arrived at great popular celebrity; but when their pretensions come to be fairly analyzed, the utmost that can be allowed to them is, that they stood the foremost in the ranks of a trade which quackery has in all ages and all countries marked peculiarly as its own. We shall now turn to the brighter era, in which men of science have begun assiduously to cultivate this part of the profession. The names of the authors of the works before us give strong assurance of the value of their publications, and a careful perusal of these will justify the feeling.

To the readers of this Journal, many of the observations of Dr Vetch are already familiar. In the present treatise he has condensed, arranged, and combined, with a considerable and valuable portion of new matter, the most important of his former contributions to ophthalmology, and he has presented to us, beyond comparison, the best account of ophthalmia, more particularly as it has prevailed in our army, and thence spread into civil life, that has yet appeared. His work is divided into two parts. In the first, he treats of the general character and treatment of ophthalmic inflammation—of ophthalmitis sclerotica—ulceration of the cornea, and opaque cornea—of ophthalmitis iritica vel sclerotica internus—on lenticular and capsular inflammation,—and on amaurosis. In the second part, he treats on ophthalmia arising from climate and atmospheric changes—catarrhal ophthalmia—the purulent ophthalmia of the British army—gonorrhœal ophthalmia, and the ophthalmia of infants. We hope that Dr Vetch will not stop on the threshold, but that he will be induced to continue as he has begun, and that he will give us a complete and systematic view of all the other affections of the eye.

Many persons have supposed, that venesection was had recourse to by the army surgeons indiscriminately, in all states and stages of inflammation of the eye, and, arguing on this gratuitous and hypothetical assumption, they have anticipated the most injurious consequences to the system, from the inordinate quantity of blood that may be taken before any barrier is opposed to the further progress of inflammatory action. The following extract, however, will show how greatly this practice has been misunderstood, and how unlikely it is, in able and discriminating hands, to cause the untoward consequences that have been so much dreaded.

"Inflammation in the conjunctiva, while it has little dependence on the general state or condition of the system, and seldom excites any of the constitutional effects of inflammation, is, on the other hand, but little affected by any moderate reduction in the force of the general circulation; depletion from the system must therefore be carried to its farthest limit, in order to make any sensible impression on a part so far removed from the force of arterial action; yet by another law, no less certain, we find, that, if the abstraction of blood, by venesection, either of the arm or neck, be carried to the extent of producing a state of syncope, the suspension of action, and the collapse of the vessels thereby induced, will prove the end or cure of the disease. The salutary effect of syncope I can only ascribe to the laxity of the vessels rendering them unable to recover their former tone and state of excitement; and it is only as far as we hold this specific effect in contemplation, that venesection is to be regarded as a principal remedy in the treatment of ophthalmia. The strength and fibre of the patient may be reduced, by abstinence and repeated blood-letting, to the lowest standard, without producing any material benefit, or insuring the organ against the destructive consequences of the farther progress of inflammation.

"The effect of syncope, produced in the way now mentioned, has no such control over the inflammation, which supports itself in the vessels of the sclerotic coat; and as it cannot be made by this summary effort to quit the hold which it has obtained, instead of urging the practice to a greater extent, we must endeavour to obtain the object by means more immediately directed to the part. The abstraction of blood in quantities proportioned to the violence of the symptoms, more especially by means of cupping and leeches, has, for the most part, a sufficient control over the various states and individual symptoms of sclerotic inflammation as to render any larger bleeding unnecessary.

"Besides the beneficial effects of bleeding by leeches applied to the adjacent integuments, we have a still more advantageous command over ocular inflammation, by the direct application of the animal to the conjunctival lining of the inferior palpebræ, and, in many of the more obscure cases of amaurotic inflammation, I have derived very great assistance by applying them to the septum nasi. The orifices which they here make bleed most freely, and may be supposed to afford the speediest relief in any congestive state of the ethmoidal circulation; and, as they never occasion echymosis, the place is particularly eligible where external appearances require to be consulted." pp. 14—16.

In further illustration of this subject, Dr Vetch observes:

"Dividing or opening the temporal artery has been considered as uniting the advantages of local to those of general depletion. With such a view I tried it at one time extensively, and I speak with deference in saying, that my experience of its utility does not correspond with the general sense entertained of its efficacy, having always found a smaller quantity of blood obtained by cupping to be of more real service than a much larger quantity taken from a single branch of the artery. Some explanation of this result may perhaps be found in the power which arteries possess of rapidly accommodating themselves to the exigency of the part which they supply, so fully exemplified in the history of tumours, of aneurisms, and in the various periodical changes to which the action of these vessels are subservient. The opening of a branch of the temporal artery seems immediately to occasion a greater flow of blood into the others; they evidently increase in size during the operation, and continue so for a considerable time afterwards. If the principal arterial trunk of an extremity is wounded, or otherwise obstructed, the anastomosing branches speedily carry the same quantity of blood as before, and with a greater degree of action, for the temperature of the part soon exceeds the natural standard, below which it had at first fallen. We may therefore perhaps infer a similar effect to follow a division of the temporal artery, and which will necessarily affect the circulation of the eye, which the bandage necessary to be applied after the operation may further increase; but whatever be the theory, the local benefit is much greater if the blood is taken away by cupping, while every other advantage is both more easily and more effectually attained by venesection, performed in the neck or the arm." pp. 38, 39.

Dr Vetch informs us, in another part of his work, that the average quantity of blood abstracted before the approach of syncope appeared to be from 24 to 34 ounces. (p. 222.) The management of another very powerful agent, caustic, is very judiciously laid down. The plan of Dr Vetch differs from that of the venerable Scarpa, but we believe the experience of the majority of practitioners in this country is in favour of the milder mode of employing it, recommended by our author. He is speaking of the ulceration and incipient protrusion of the membrane which lines the anterior surface of the cornea, before the more advanced stages of staphyloma are fairly established.

"First, the ulcerative process can only be checked, when it is proceeding to destroy this membrane, by those measures which are capable of subduing the inflammation on which the action depends. As long, therefore, as there is an appearance of activity in the disease, or recurrence of pain, local blood-letting by cupping or leeches must be steadily adhered to. The indication of the ulcer healing is easily seen in the diminished activity of the inflammation, relief from pain, and the clear aspect of the ulcerated part. The injection of vegetable tepid astringent infusions may be used, or milk and water only. When called upon in extreme cases, where the immediate perforation of the inner membrane is threatened, we may with great propriety resort to the operation of puncturing the cornea, at a place as remote as possible from the ulcer; the operation being, I conceive, in such a case, fully warranted both by reason and experience. Next in importance to a diminution of the action on which the ulcer depends, is the removal by scarification of any slough thrown out, either on its surface or imbedded in the adjoining part of the cornea. Sometimes, but always subordinate to these indications, we may add some topical applications to the ulcer, a solution of nitrate of silver, the infusion of tobacco, or calomel in powder applied with a camel's hair pencil, may occasionally be employed with advantage. Thirdly, the application of caustic to the incipient staphyloma, or projection of the inner membrane, whether accompanied by procidentia iridis or not. In speaking of this, I must observe, that it becomes, altogether, a different remedy from the mode of employing it recommended by Scarpa, who directs it to be applied till a slough is formed, whilst an assistant keeps the eye fixed. Such an application, my experience would lead me to suppose, would be fatal to the success of the remedy. It is quite sufficient that it barely and instantaneously touches the surface. By this slight application repeated daily, the incipient vesicle recedes, and the iris, though pointing forwards, attracted as it were to the cornea, is saved from any permanent adhesion. Caustic cannot come in contact with any moist part without leaving by solution a white mark, but this is all that it should be allowed to produce. If the caustic touches by accident the edge of the ulcer, or any part but the apex of the projecting vesicle, it will often produce much mischief. From one application too powerful I have seen the benefit of long previous successful treatment completely lost." pp. 57, 58.

When staphyloma is unfortunately established, Dr Vetch has succeeded in removing the deformity by the proper management of caustic and the seton, and in bringing the parts to that state in which the operation for artificial pupil may be advantageously had recourse to. Here again he differs from Scarpa, or rather from Celsus, who removes the apex of the tumour; neither does he in these cases approve of the evacuation of the aqueous tumour by puncture, as the regeneration of that fluid renders it necessary to perform the operation again and again.

The mode in which Dr Vetch has executed the section on opaque cornea, and the chapter on the purulent ophthalmia of the army, meets our unqualified approbation. Although he necessarily speaks of his own professional labours as a public officer, he taxes neither the patience nor the pockets of his readers by a long detail of the unworthy attempts that have been made to detract from his merits. For the present race it would be unnecessary, since the opinion of all that is scientific and estimable in the profession is decidedly in his favour, and, for futurity, a detail of personal feelings might excite sympathy, but could have little influence on the impartial historian of our art, within whose province it will fall to record, at some future period, the result of claims without foundation, successfully supported by the hand of power, where power was irresistible and explanation impracticable.

In the opinion expressed by Dr Vetch of the injurious effects of the excision of the conjunctiva, when pertinaciously persevered in, we fully coincide. For some years past we have diligently watched the effects of this operation, and we, without hesitation, declare our conviction, that it is inadequate to effect a radical cure of the granular state of the lid. In adroit hands it may be effected without serious injury; but we have seen the most untoward consequences follow its employment in the ordinary run of practice. Among these we have seen the parts so much injured by the repetition of this process, that, after violent paroxysms of inflammation, it became impossible to evert the lids, and, in numerous cases, the ball of the eye has become fixed and immoveable on its axis, while, in many others, it has sunk in its orbit, and the sphere of vision has been much lessened. We do not, however, mean to say, that, in certain circumstances, the knife and the scissars may not be advantageously associated to the escharotics.

The chapter on Iritis contains an excellent account of the symptoms both in the ordinary and the arthritic species of that troublesome affection. Dr Vetch admits of the specific efficacy of mercury in checking the progress of the inflammation, but, in the treatment, does not much insist on it, at least not to the extent of affecting the mouth. He depends upon cupping the temples, on the rubbing a small quantity of mercurial ointment and opium on the eyelid and temple morning and evening, and the local use of stramonium and hyoscyamus. The free use of digitalis he also considers as a powerful auxiliary.

In the chapter on Cataract and Amaurosis our author gives a brief but comprehensive view of many interesting points in the pathology of these diseases, but neither in this nor any other part of his work does he enter into surgical details. We must again express our hope that these are reserved for another volume.

Dr Vetch's work is illustrated by three plates, which are sufficiently explanatory, without, by their style of execution, enhancing the price of the book.

Mr Travers's Synopsis embraces a much wider field than Dr Vetch's treatise, and is necessarily less diffuse on particular subjects. His observations are divided into the anatomical, the physiological, the pathological, and the practical,—embracing a complete and condensed system of ophthalmology; and, when we say that there is not a section which does not exhibit proofs of the talent and the judgment of the author, we only express an opinion in which we are assured we shall be borne out by every properly qualified person who opens this interesting and beautiful volume. The abilities of Mr Travers have long since been known to the public, and in his present work he has not taxed them beyond their powers, nor has he employed them on a subject in which he had not ample experience. The practice of many years at the Eye Infirmary has furnished him with abundant opportunities for observing disease; his intimate knowledge of his profession has enabled him to appretiate and avail himself of them; and, in the liberal spirit of a lover of science, he has, in the work before us, laid open his acquisitions to the members of the profession at large, and presented them with a system of British ophthalmic surgery, which, in no one point that we have examined, shrinks from a comparison with the best works of our German and Italian brethren.

It cannot be expected of us to enter into an analysis of a synoptical work; we shall, perhaps, best perform our duty by giving a specimen of the mode in which it is executed. We shall, therefore, present our readers with a short extract. This we shall take from the page now open before us, which contains an account of that species of functional amaurosis which Mr Travers denominates the Metastatic.

> "Amaurosis by metastasis is not unfrequent. I have seen it from the state threatening effusion into the chest, from gout in the foot, and swelled testicle; in all which cases the oppressed organs were suddenly relieved, and the eye as suddenly affected. Thus a person goes to bed with good vision and rises blind.
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> "A lady, above the middle age, who had long been subject to occasional attacks of pulmonary congestion, after one of unusual severity, threatening hydrothorax, was suddenly affected with paralysis of the upper eyelid of the left eye; the sight was slightly, if at all impaired. On the following day, however, she had totally lost the sight of that eye, the pupil of which was dilated and motionless. On the morning of the third day, the upper eyelid of the right eye was paralysed, and the vision of that eye was also much impaired. On the fourth day the ptosis on the left side had disappeared, and the eyelid on the right side resumed its position. She was now in a state nearly approaching to complete blindness; both pupils dilated, although the left most so, and nearly, if not quite inactive. The attack was accompanied by a marked simultaneous relief from the threatening symptoms of the original complaint, and occasional fugitive pains, across the front and top of the head. Upon inspecting the eyes opposite the light the appearance described b, page 147, was conspicuous in both eyes, and led her physicians, who were of the

first eminence, to apprehend an incipient opacity in some interior texture. Under the frequent administration of calomel and rhubarb, in moderate doses, and the alternate repeated application of blisters behind the ear, and to the nape of the neck, with abstemious diet, the vision of both eyes was gradually restored.

"A man, the subject of hernia humoralis, lost an unusual quantity of blood by the bites of leeches applied to the part. The testes were suddenly and greatly reduced, and he complained of uneasy sensations in his head; to use his own phrase, a pain like opening and shutting. Without any other visible sign of amaurosis than a dilated and sluggish state of the pupils, he described a dark screen seeming to rise gradually from below upward, and at length totally obscuring the sight. He lost blood from the head repeatedly, and underwent a full course of mercury without benefit. A state of perfect amaurosis ensued.

"The gout attacks the eye through the medium of the stomach. Vomiting occurs with pain in that organ, on the subsidence of an inflammation in the extremities, and is succeeded by violent pain in the head. The loss of sight is sudden and permanent.

"A gentleman, after an attack of gouty inflammation in the foot which suddenly ceased, was attacked with pain in the stomach and vomiting; this in the course of the day subsided, and in the night a violent pain in the head was succeeded by an almost total loss of sight, which was never afterwards in any degree restored, although, by steeping the feet in a hot infusion of mustard, the great toe inflamed so much as entirely to relieve the head and stomach.

"To this class belong the cases of amaurosis consequent upon the sudden suspension of the catamenia, and of habitual hemorrhoidal discharges; the rapid healing of large ulcers of long standing, and the sudden retrocession of cutaneous eruptions." Pp. 161—164.

"The restoration of the original malady," says Mr Travers, "if it be practicable without involving the patient's safety, or the substitution of an artificial excitement or discharge, which may serve as an equivalent, appears to be the natural indication, and such a practice has been attended with success. (See case of Professor Beer's in the 'Analecta' of the Quarterly Journal of Foreign Medicine and Surgery, No. VII.) But the prognosis is necessarily one of *great* uncertainty."

Six beautiful plates illustrate this volume.

III.

Practical Observations on Chronic Affections of the Digestive Organs, and on Bilious and Nervous Disorders; being an Attempt to combine with English Practice some useful methods of Cure employed on the Continent. Also Remarks on Warm

Mineral Baths, Mineral Waters in general, and on the Use and Abuse of the Cheltenham Waters. By JOHN THOMAS, M. D. 8vo. London, 1820. Pp. 168.

THE avowed object of this little volume is, as its author informs us, to communicate some useful means employed on the Continent in the treatment of chronic affections of the digestive organs, which are not generally employed in English practice. These means are glysters, warm-baths, and the application of leeches to the anus. We are convinced that these remedies have hitherto been too much neglected amongst us; of the last, in particular, we have long had a very favourable opinion from having ourselves witnessed its utility in Continental practice. In a former Number of this Journal, (Vol. XIV. page 136,) the late respectable Dr Brown gave some accounts of the mode and extent to which leeches to the anus were employed in Russia, an account which has been confirmed to us by a British physician who long practised in that country, as well as by several native physicians with whom we have conversed upon the subject.

Dr Thomas, although a Cheltenham physician, adverts, with much delicacy, to the late disputes with regard to the addition of what has been denominated the concentrated water, to the water drawn from the spring. We are not in possession of all the facts and statements upon this subject, and, though we were, we should not consider it as respectful to the profession to record squabbles which are always disgraceful to it, happen where they may, but which are doubly so when they occur at watering-places of fashionable resort. We may mention, however, that, although he advocates the cause of the Cheltenham waters, our author does not approve of any addition to them, inasmuch as the natural mineral waters owe a considerable share of their efficacy to the extreme state of dilution, in which they hold their component parts in solution. Those of Cheltenham Dr Thomas supposes to derive their powers from a triple union of the sulphate of magnesia, soda, and potass. He gives some analysis of these waters, as well as of a few of the Continental medicinal springs, with a short account of their virtues, in order to afford data for a comparison. None of them, it appears, are so highly impregnated with saline principles, but they are generally more gaseous, and are mostly of that class denominated *thermal.*

To the employment of mineral waters as baths, as well as internally, Dr Thomas's opinions are highly favourable; and he urges the propriety of remaining in them, not as we are in the habit of doing in England, for ten or fifteen minutes, but for one hour at least, as they are used on the Continent. In some places, to our knowledge, they are employed for a much longer period; and at those of Leuck the patients sit, read, eat, and play at drafts upon floating boards for half the day. We cannot be supposed to advise such excess, but we agree with our author in considering that a moderate imitation of the practice of our neighbours might, under certain circumstances, be advantageously adopted. A considerable revolution of opinion has lately taken place among British physicians as to the salubrity of the climate of the south of France for their phthisical patients. The thesis of Dr Sinclair, published at this University in 1817, greatly contributed to this change. The reports of Drs Clarke and Carter corroborated the results of Dr Sinclair's experience, which is still farther confirmed by the statement of Dr Thomas, who, it appears, resided for several years at Thoulouse, itself the scene of innumerable deaths of emigrant invalids from this country.

Dr Thomas's little tract is offered to the public in a very modest and unassuming garb; and although we look with rather a jealous eye to works dated from fashionable watering-places, we are inclined to view the present in a much more favourable light. The author appears to regulate his practice on the principles of Broussais, whose doctrines, though announced by our French brethren as perfectly novel, have, in their principal points, been long acted upon in this country by our best practical physicians, and with serious advantage, especially in the chronic inflammatory affections of the abdominal viscera. The observations on the means of depleting the nervous system of these organs we look upon as the best part of the publication before us. The effects of the abstraction of blood from the hæmorrhoidal veins must necessarily extend to the system of the vena portarum; and, when judiciously combined with the blue pill, purgatives, the warm-bath and blisters to the region of the liver, there exists abundant proof of the efficacy of the practice in many obstinate affections of the viscera of the abdomen. We think, therefore, that Dr Thomas is entitled to our thanks for his good intentions; and we hope that his publication may contribute to make the practice which he advocates more generally known and adopted. His present residence abounds in fit objects for the trial; many of whom, from their acquaintance with foreign manners, must be familiar with the practice; and their example may induce others to lay aside that "*mauvaise honte*," which is likely to prove the most serious obstacle to the more general adoption of this useful modification of local blood-letting in this country.

IV.

The Elements of Medical Logic, illustrated by Practical Proofs and Examples, including a Statement of the Evidence respecting the Contagious Nature of the Yellow Fever. By Sir Gilbert Blane, Bart. Physician to the Prince Regent, &c. &c. &c. pp. 216. 8vo. London, 1819.

The title of this work seems highly appropriate and significant: logic being defined by Dr Watts to be "the art of using reason in our inquiries after truth, and of communicating it to others;" and physic being beset with fallacies, and false reasonings, much more than any other art or science, logical precision is more called for.

This is the first and only work in which an attempt has been made to lay the foundation of medical reasoning on the most profound principles of philosophy and metaphysics; and to those who may find this part dry and abstruse, it is amply made up by the variety and utility of the practical illustrations, which are throughout equally familiar and instructive. Much, indeed, has been done to open and enlarge the views of our brethren, particularly the younger part of them; and the whole liberal part of the profession must hail it with gratitude and applause. The style is uniformly clear, forcible, and elegant.

The light of logic, in its best form, that is, the logic of Bacon, not of Aristotle, has been here carried into the darkest corners of medical science, with plainness, perspicuity, and brevity; and we trust it will open new practical views to all intelligent members of the profession, by the originality and felicity with which the author has illustrated the subject.

The enumeration of the principles peculiar to life is new and striking, being the elements of those organic and functional distinctions upon which other systems have been built, and seems founded on a close and accurate analysis of the ultimate and simple powers which actuate these functions and organs, and through which they operate.

The arrangement of these powers, principles, faculties, or by whatever name they are called, argues a vigorous exercise of reason, under the guidance of chaste observation, and an invariable appeal to fact, and not to hypothesis, with the salutary cautions of avoiding what lies beyond the grasp of the human understanding. This arrangement of Sir Gilbert Blane establishes on a sure basis the hitherto loose and incoherent language of systematic writers, and may serve as a future text-book for defining certain terms which have led to endless confusion and ambiguity.

The peculiar principles of life above alluded to are the Generative, Conservative, Temperative, Assimilative, Formative, Restorative, Motive, Sensitive, Sympathetic; to which the author seems inclined to add another, the *Determinative.* These are all defined and illustrated with great clearness and conciseness, and the object of the author in enumerating them is, to shew that animal life is of such a complicated structure, that it is hopeless to think of operating upon it *a priori* with practical effect; and he states the attempt of doing so, as one of the great causes of retarding and obstructing the progress of practical medicine. But though he states observation and legitimate induction from facts as the great principle of improvement, he is desirous of not disparaging the value of anatomy, physiology, and pathology, the advantages of which he amply and clearly enunciates.

The following passage will shew the author's estimate of the comparative merits of the dogmatical and empirical methods of cultivating medicine. At page 89, he says,

"It must be obvious to every reflecting mind, that those who have made themselves acquainted with the various organs and functions engaged in the animal economy, must have a great advantage in practice over the unlearned empiric, in discriminating the morbid affections from each other, and in varying accordingly the respective means of relief. For instance, a physiologist and anatomist, from his knowledge of the intimate nature of morbid affections, the difference of their seat, and other circumstances, is able to distinguish spasmodic from inflammatory pains; a distinction which would not readily occur to an uncultivated observer, but of the most vital importance in practice, for the remedies required for the relief and cure of a spasmodic pain in the stomach and bowels, demands a treatment not only different, but opposite to that which proceeds from inflammation. It is only *anatomical* and *physiological* science that can give a practitioner a clear vivid conception of these and other distinctions, essential to the safe and efficient treatment of diseases."

At page 93, "We have already more than once adverted to the profound wisdom displayed in the constitution of our mental faculties, whereby they are made responsive to the constitution of external nature, in the same manner as our senses, and that this is strikingly exemplified by the susceptibility of the human mind to durable associations and habits, from the frequent repetition of connected events, arising out of the constancy of the laws of nature. Unless these were indelibly imprinted or recorded, as it were, in the early stage of our existence, life could not be maintained; all those instincts by which we pursue what is salutary, and eschew what is noxious and dangerous, being founded on this principle. The avoiding of fire, of precipices, the collision of hard and pointed bodies, may be quoted as examples of this. And what is called sagacity, in the adult stages of life, is a sort of approach to, or imitation of, this intuitive faculty; but, instead of being the immediate suggestion of nature, is founded on cultivation, which, by practice, learns to connect cause and effect, means and ends, an operation which, in well turned minds, is performed with promptitude and precision, by interpreting fairly the appearances of nature, and stripping them of those adventitious fallacies which mislead ordinary minds. In order to attain this, there are required an appropriate natural capacity, the good fortune of not being beset with prejudices in early life; an habitual exercise in the observation of nature; a candid and ingenuous disposition; an ardent love of truth; an exalted sense of duty; a large store of facts in a correct and tenacious memory; the power of combining, comparing, and discriminating these, by an intuitive glance in the moment of applying them to the practical end in view. This is what is understood by the term *tact* in English and French, and *εὐστοχία*, in Greek, being the faculty by which practical facts are decided on, and is performed by an instantaneous, silent, and almost unconscious calculation and induction, to be met with only in minds, at once happily constituted and highly cultivated."

And at page 96, he sums up the whole thus:

"From all that has been said, we ought to be, in some measure, qualified to come to a decision, on the celebrated question of the comparative merits of the empirical and dogmatical methods of cultivating physic. It seems pretty evident, that if either method were employed exclusively, or carried to an extreme, the art of physic would suffer, both in its efficiency, and its prospects of future improvement. It has clearly appeared, that, under such a complication of causes, influencing the operations of life, it would be utterly hopeless to decide any point purely and strictly *a priori*, and that it is absolutely necessary, that experience be called in as an aid and a test to the inferences of theory. On the other hand, a blind empiricism would be found deficient, without that discriminative judgment, founded on an acquaintance with the laws of life, and without those enlarged and correct views of general nature, by which the excess of credulity and scepticism is equally repressed. This question was much agitated in antiquity, and is most ingeniously, eloquently, and judiciously discussed by Celsus, in the preface to his valuable work. He evidently leans to the side of empiricism, which, in the very crude state of anatomy and physiology in that age, certainly argues his good sense; but he by no means explodes the study of the structure and functions of the body, as of no practical utility, and concludes with the following recommendation, or rather apology, for dogmatism: '*Ista naturæ rerum contemplatio, quamvis non faciat medicum, aptiorem tamen medicinæ reddit.*'"

"The conclusion, therefore, upon the whole, is, that those two methods ought not to be regarded as adversaries, but as allies; and

> that good sense will consist in excluding neither, but in fairly appreciating what is due to each."
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> "In the course of the preceding discussions, it has appeared, that, from the dark and complicated nature of the animal economy, there is the utmost risk of error in drawing inferences *a priori*, and that crude and hasty hypothesis has been a source of much false reasoning, and therefore of dangerous error in its practical application. In the following enumeration, therefore, of the several obstacles which have obstructed and retarded the improvement of medicine, this stands foremost," &c.

The most leading principle of the work is to inculcate impressively on physiologists, pathologists, and practitioners, that the living frame is guided by laws of its own, distinct from those of inanimate matter. A large portion of the work is also taken up in pointing out the various sources of error, as might be expected in a treatise of which the title is the Elements of Medical Logic.

Besides the abuses of hypothetical reasoning arising out of the occasional perversion of physiology, he enumerates, as sources of error, the diversity observable in the constitutions of individuals; the difficulty of appreciating the efforts of nature, and in discriminating them from those of art; superstition; the ambiguity of language; the fallacy of testimony; preconceived opinions; and the excessive deference to authority. Some of these have been separately treated by the late Dr J. Gregory, Dr G. Fordyce, M. Cabanis, and Richerand; but the whole has never before been reduced into a body of doctrine; and it is none of the least recommendations of this work, that a vast extent of general knowledge has been brought to bear upon the subject of it.

But perhaps the most useful parts of the work are those in which practical illustrations are introduced. In the course of the author's remarks on the use of purgatives, so universally recommended by Dr Hamilton, after adverting to their indiscriminate use in fever, he says, concerning the unqualified use of them in Chorea St. Viti, page 110:

> "The qualified adoption of this practice, I am so far from disputing, that I lately imitated it with success in the case of a young female from the East Indies, in which the vitiated quality, incredible quantity, and long continuance of alvine *sordes*, were such, as to bid defiance to all the principles of physiology and pathology to account for. But in a young English female, under my care, about the same time, for the same complaint, nothing preternatural being observed in the alvine discharges, after the first clearance of the intestines, she was successfully treated by the cold bath, and metallic tonics, chiefly the sulphate and oxyde of zinc, and the recovery was effected in a shorter time than in the other case. I found, that in St Thomas's

hospital, the like success attended the latter treatment of this disease. Opium, hyoscyamus, and leeches to the temples, were found good auxiliaries."

And in combating what Dr Hamilton says concerning the indifferent employment of all species of purgatives, Sir Gilbert thus illustrates the specific operation of certain medicines, page 111:

> "What, for instance, can be more different than the operation of aloes acting as a mere eccoprotick on the muscular fibres of the intestines, and only in a particular portion of them, namely, the descending colon and rectum, and expelling only solid feces, from that of elaterium, of which half a grain, taken three or four times at the intervals of half an hour, evacuates immense quantities of serous fluid, exhibiting an example of the wonderful power of sympathy; for an impression made on the internal surface of the stomach, by a few particles of matter, conveys by magic, as it were, an impulse to the most remote extremities, rousing their absorbents to action; and in case of œdema there, awakening the sleeping energies of these vessels, which, like millions of pumps at work, transmit the morbid fluid to the intestines and urinary passages, affecting a detumescence of the hydropic limbs in the course of a few hours, and affording a striking illustration of the operation of sorbefacient medicines."

He in like manner compares the action of calomel, neutral salts, and other articles.

Let not the reader suppose that the writer of these remarks does not see the blemishes as well as beauties in the work under consideration. He entertains, for instance, great doubts of the propriety of arranging sleep with the *vis medicatrix naturæ*. It is true, the epithet *restorative* is strictly applicable to both; but they lie so wide in other points, that we should recommend the author to split them, if possible, into two heads. On the subject of sleep, however, the reader will find some new remarks and interesting anecdotes.

We are also of opinion that he has handled Dr Bancroft too roughly; for, though there be not an intemperate nor abusive expression in the whole, the strictures are too cutting and severe; and the author ought to have considered, that it is as cruel *to heap coals of fire on the head*, as to pierce or lacerate with a weapon. We hope the author will soften some of his expressions in another edition.

We are farther of opinion, that the author has affected too much brevity: *Brevis esse laboro obscurus fio*. Some of the subjects, that of Temperative, for instance, is so concise, that, considering the novelty and importance of it, more expansion of illustration seems to be required to render the ideas familiar to the bulk of readers. Lastly, we have rarely met with a work in which the press has been so carelessly corrected, for it abounds with typographical errors.

V.

A Treatise on Nervous Diseases. By JOHN COOKE, M. D. F. A. S. &c. In two volumes.—Vol. I. *On Apoplexy, including Apoplexia Hydrocephalica, or Water in the Head.* pp. 469. —Vol. II. Part I. *History and Method of Cure of the various Species of Palsy.* pp. 215. 8vo. London, 1820-21.

As readers and reviewers we have daily occasion to lament the excessive multiplication of books, which will soon make bibliographical learning to consist in a knowledge of the titles, not of the contents of books.

The patriotic author of the Code of Health and Longevity, in explaining the plan of his unequal work, has expressed fully our sentiments upon the best method of remedying the growing evil; and Dr Cooke has, in fact, put successfully into practice, in one subject, the worthy baronet's unjustly derided project of condensing human knowledge into an accessible form.

"Let a collection be made of every author, whether ancient or modern, who has written directly or indirectly regarding the points in question, and let this be thoroughly examined by intelligent men, and let every valuable fact or observation they contain be extracted out of them. The whole mass of materials being thus collected, let the whole be digested, and thus a work will be formed capable, undoubtedly, of improvement by future observations and new discoveries, but which would contain all the material information hitherto accumulated."

Now this is nearly what Dr Cooke has done in these volumes in regard to apoplexy and palsy. He has perused, with intelligence, the best authors, ancient and modern, who have treated of these affections, and he has collected, arranged, and communicated, in plain clear language, whatever he has found in them worthy of notice. It is impossible not to admire the modesty with which Dr Cooke speaks of his own exertions, claiming only the merit of being a careful compiler, and yet the task of compilation is by no means easy, and may evince more talent in the author than avowed efforts at originality.

Dr Cooke prefixes to his work an introductory account of the opinions of ancient and modern physiologists respecting the nature and use of the nervous system, which was read at the London College of Physicians as the Croonian lecture of the year 1819.

It would be useless to attempt an analysis of an analysis. Suffice it to say, that it is ably executed, and, if the whole school of modern German metaphysical physiologists be passed over, with the exception of Gall and Spurzheim, there is, perhaps, no reason for regret, when we consider how little such speculations contribute to the improvement of our professional skill. We fully subscribe to the concluding paragraph of our author.

> "Physiologists have often erred by paying more attention to the investigation of the nature of the subjects of their inquiries than to that of the laws by which they are governed. Of the *ultimate nature or essence*, either of mind or matter, or of that compound which we call the nervous system, we know nothing; but of the laws by which it is governed, or rather the circumstances by which it is influenced, we know enough to enable us, in some degree at least, to understand the nature and causes, and to explain the phenomena of many of its morbid affections. Instead, therefore, of perplexing ourselves in vain efforts to comprehend what the great Author of nature has placed beyond our reach, and indulging in speculations which, however interesting, can lead to no satisfactory conclusion, let us turn our attention to a subject better suited to our powers, namely, the investigation of the diseases of the nervous system.' Pp. 156, 157.

We may notice that, besides the selection and abridgment of published observations and opinions, we find some original experiments and ideas communicated to the author by Mr Brodie, Mr Carlisle, and others, and, in his preface, he expresses his anxiety to be favoured with such. In this respect we are of an opposite opinion; for however valuable such information may be in itself, we conceive it misplaced in such a work, in which condensation and impartiality are the very objects to be aimed at, while communications from esteemed friends require detail and impose obligations upon the compiler. There is more published matter than can be managed, and no person will consult such a work for novelties.

The remainder of the first volume is occupied with Apoplexy, and he treats in succession of its definitions and history, dissections, causes, distinctions, diagnosis, prognosis, and treatment. He then devotes separate chapters to Lethargy, Coma, Carus, Cataphora, &c. and to the Apoplexia Hydrocephalica or Hydrocephalus Internus.

Definitions are on all occasions difficult, and there are very few definitions of diseases which are satisfactory. Those given of apoplexy are no exception to this remark, although our author's is, perhaps, as good as we have any reason to expect. Every person knows what is understood by a stroke of apoplexy, but, when nosologists attempt to draw the line between it and affections in some respects resembling it, they fail. Two particulars seem to us essential to this malady, which are not sufficiently attended to; one is the suddenness of the invasion, and the other, that it does not proceed from certain causes primarily obstructing respiration, or from narcotic poisons. Precursory symptoms often indicate a disposition to apoplexy, but the stroke is commonly instantaneous, always sudden, and, until it take place, the apoplexy cannot be said to exist. Also in various forms of fever, especially cephalic typhus, in the last stage of hydrocephalus acutus, and in torpor from tumours or depressions of the skull, comprising the brain, the animal functions are completely or nearly suspended; but the disease is distinguished from apoplexy by the gradual abolition of the animal functions. Again, hanging, drowning, the mephitic gases, alcohol, and various narcotic poisons, induce states, having much resemblance to apoplexy, and sometimes even producing it; but still the affections are essentially different, extravasation of blood in the brain being as unusual an occurrence in any of these as its absence in the true apoplectic attack.

Dr Cooke seems to doubt the occurrence of sudden death from apoplexy. He is probably right that it more frequently proceeds from other causes. But we saw a man who died instantaneously, and, upon opening the head, there were great extravasations of blood filling the ventricles, and the arteries of the brain were generally diseased, that earthy degeneration of their coats, to which Scarpa ascribes aneurism, being visible in many places. We unluckily neglected the examination of other parts of the arterial system, satisfied with having discovered the cause of death. Many important pathological facts are thus lost from indolence and want of curiosity. It may, indeed, be doubted whether such a case is to be considered as true apoplexy. Death, indeed, arises from the bursting of a blood-vessel in the head, giving rise to sudden compression on the brain, just as the bursting of a vessel in the head of a healthy man by concussion has done; but, in genuine apoplexy, the extravasation of blood takes place, not from the rupture of a single considerable vessel, but from the giving way at once of all the vessels of a limited portion of the brain, generally of the medullary substance, which is broken down, and inseparably mixed with the effused blood.

Apoplexy is certainly more a disease of the wealthy than of the poor; but we have not found it so rare in hospital practice as Dr Cooke, who does not recollect a single instance of the occurrence of apoplexy in the London Hospital during an attendance there of above twenty years. Cases occur not very unfrequently in that of Edinburgh, which cannot be ascribed to drinking spirits to excess.

In the chapter which treats of dissections, all the various appearances which have been observed are quoted; but, as Dr Cooke has properly stated, it may be doubted whether all the cases were really apoplexy. We regret that he has not gone farther, and attempted to distinguish between the genuine and spurious cases. Extravasation of blood in the brain is certainly the common phenomenon discovered in those who die of apoplexy. Cases have been quoted where either no sanguineous extravasation has been found, or there has been an effusion of serum, not of blood, or morbid appearances of a totally different nature. Where nothing morbid has been discovered, it does not always imply that no sanguineous extravasation existed, unless we are assured that the examination was very skilful and minute, for it is astonishing how very limited the change sometimes is; and in all other cases the history of the symptoms should be so accurate as to leave no doubt of the disease being really apoplexy, before we admit the appearances found after death to belong to that disease. We are convinced that, if this critical test be applied to the subject, we shall find that much of the confusion and contradiction now existing will be removed from the history of the appearances on dissection in apoplexy. As connected with this subject, we quote from Dr Cooke's volume on Palsy, page 76, a very curious report of the experience of a Parisian hospital physician, although we suspect that M. Serres has not been very exact in the diagnosis of the disease.

> "Having thus, as he imagines, overturned the old doctrines respecting the causes and distinctions of apoplexy, M. Serres proceeds to point out the foundation of his new division of the disease.—On carefully observing and comparing the symptoms of apoplexy, he perceived that it chiefly appears in two different forms; the one simple, without palsy, the other always combined with the loss of motion of one side or the other. The first he calls *meningeal*, the second *cerebral* apoplexy; the first consisting in a diseased state of the meninges of the brain, the second is a diseased state of the brain itself. In the meningeal apoplexy, the brain is healthy, but the membranes are disordered, and frequently fluids of various kinds are effused. In the cerebral, the brain is altered in its structure, but no fluids are effused. Now M. Serres maintains, that hemiplegia is connected with the cerebral, but never with the meningeal apoplexy; that effusions are the effects of irritation of the meninges, or of ruptures of blood-vessels taking place in the course of apoplexies, but they never, by compressing the brain, give occasion to the disease.

"Out of one hundred cases of apoplexy which M. Serres had an opportunity of seeing, twenty-one, he says, were simple, and seventy-nine were complicated with palsy. In sixteen of the first description there was serous effusion in the ventricles and circumvolutions of the brain, separately or jointly; in one there was a sero-sanguineous effusion in the left ventricle; in two there was a similar effusion betwixt the tunica arachnoidea and the pia mater, upon the two hemispheres; and in the two others no effusion could be seen. In all these cases the brain was sound; but the meninges were impaired in different degrees. In those of the longest standing, in which the serous effusion was great, the pia mater was injected, the vessels greatly dilated, and the arachnoid thickened and opaque; in that case in which the ventricle alone was the seat of the sero-sanguineous effusion, the arachnoid was somewhat opaque in its extent, red in the interior of the ventricle, which was studded with numerous miliary granulations. In the two cases of effusion upon the hemispheres, the arachnoid of the lobes was sensibly inflamed; and where there was no effusion, this membrane was dry and thickened.—Does not this constant conformity, says M. Serres, betwixt the effusions and the alteration in the meninges, and the effusions, show that they are connected together? Do we not, in the different affections of the arachnoid and pia mater, see the source of the different effusions, and the reason of the absence of all moisture in the two last-mentioned cases? Ought not the irritation of the arachnoid of the ventricle, and of the portion covering the lobes, to be considered as having produced the sero-sanguineous effusion? A multitude of facts, says M. Serres, enable me to answer these questions in the affirmative; and I think I may take it as a principle, that in this species of apoplexy the meninges are primarily and principally affected, and that the different effusions are only the effects of these alterations. In the apoplexy connected with palsy, on the other hand, M. Serres observes, there are no serous or sero-sanguineous effusions in the natural cavities of the brain, or in the space betwixt the duplicatures: there is no alteration in the texture of the meninges; but the brain itself is materially altered in its structure, and appears to be exclusively the centre of activity of this apoplexy. Cavities are found in the substance of the lobes, the cerebral parts which surround them through their whole compass are inflamed, are of a reddish or yellowish colour, and hardened in proportion to the duration of the interval betwixt the formation of the cavity, and the death of the patient. The blood which fills these excavations is either coagulated, or half liquid, according as the cavities occupy the cortical or medullary substance, the corpora striata, the thalami nervorum opticorum, or the interior of the ventricles, into which, after having broken down their sides, it often penetrates. In the complicated apoplexy, M. Serres thinks the palsy is a necessary effect of the organic alteration of the brain; whilst, in the simple apoplexy, the brain being sound, motion remains uninjured. Hence, he says, when an apoplexy in its course shows no traces of palsy, may we not presume that its seat is in the meninges, and that the brain is not the centre of activity of the disorder? And when, on the contrary, palsy becomes complicated with apoplexy in its course, that the encephalon and not the meninges is principally the seat of the irritation? Serous, sero-sanguineous, bloody, or purulent effusions, are the effects, M. Serres says, of irritation of the meninges, or the encephalon; or of arterial or venous ruptures which supervene in the course of apoplexy. If we properly interpret the facts, it appears easy to assign to these apoplexies their proper denominations. Hence, as is above mentioned, M. Serres calls the apoplexies without palsy *meningeal*, and those combined with paralytic affections *cerebral.* When apoplexy is combined with palsy, the latter affection, M. Serres thinks, is a necessary effect of an organic alteration in the brain, and he thinks it possible for us to know, during the life of the patient, what kind of apoplexy we have to combat. If it be simple apoplexy, the patient moving his limbs when excited, the disease, he says, has its seat in the meninges; if, on the contrary, it is accompanied with hemiplegia, the mouth being drawn to one side, the practitioner may conclude the apoplexy to be cerebral. For an account of other distinguishing symptoms, and the general description, and particular observations respecting these apoplexies, I must refer to the *Annuaire Medico-chirurgicale* for April 1820." pp. 76—81.

In regard to the causes of apoplexy, we agree entirely with Dr Cooke, that "the sudden apoplexy seems always more or less connected with an effusion of blood," and we think he refutes the opposite opinion of Dr Kirkland, which, after all, only amounts to asserting that apoplexy is not always the consequence of effusion. He also argues against the opinion of our most valued correspondent Dr Abercrombie, "that the doctrine of determination to the head is not supported by the principles of pathology, and does not accord with the phenomena of apoplexy," an opinion, in our judgment, more original than sound.

Dr Cooke's observations on the distinctions of apoplexy coincide with our ideas of the subject. Cullen's species of *traumatica*, *venenata, and hydrocephalica*, are distinct diseases, and his distinction of proper apoplexy into *sanguinia* and *serosa* is unfounded, and leads to erroneous practice.

"On the whole, if we admit the distinction of apoplexy into the sanguineous and serous, I think we must also admit that the serous apoplexy very seldom occurs; and I am of opinion, that, even in very old persons of leucophlegmatic habits, pale countenance, small pulse, and other marks of serous apoplexy, *if the disease come on suddenly*, it ought to be considered as probably arising from an effusion of blood within the cranium." p. 268.

We pass over the chapter on the Diagnosis and Prognosis of

; and proceed to that on the Treatment, merely to no-
his observations are in every respect judicious, and
as given a very candid statement of the controversy re-
:he safety and utility of emetics, a controversy in which,
ay others, there was truth and error advanced on both
Ve agree with Dr Cooke in rejecting the use of internal
stimulants and nervous remedies.

The chapter on Lethargy and Catalepsy contains no original observations; that on Hydrocephalus Internus is valuable, as making English readers better acquainted with the useful work of Dr Coindet of Geneva. We quote the following passages as containing original observations.

> "In his (Dr Coindet's) history of the first variety of hydrencephalus he lays great stress on the peculiar kind of cry of children affected by it, and on certain appearances in the urine. The urine, he says, furnishes us with two appearances which are characteristic of the complaint; on the second of which he lays particular stress, even if it should have occurred only once, and while the nature of the malady was doubtful. The first of these appearances is a white, farinaceous, cretaceous deposit; the second is micaceous. He has seen these united, or changing from the one to the other. A more particular account of these appearances in the urine may be seen in Dr Coindet's memoir." pp. 402, 403.

> "In forming the diagnosis, Dr Coindet, in addition to other distinguishing symptoms, lays considerable stress on what he calls the hydrencephalic moan or cry. Respiration, he says, becomes frequent, and is interrupted by a cry or plaintive sigh, which I call hydrencephalic, because it does not occur in any other disease, and powerfully aids the diagnosis. The appearances in the urine, and the insensibility of the stomach to the action of emetics above mentioned, Dr Coindet thinks characteristic of the disease." pp. 427, 428.

But with all these aids the diagnosis of the disease is often difficult, sometimes impossible. We have seen and treated many cases of children affected with the present epidemic fever, which could not be distinguished from hydrocephalus, until the period of convalescence, unless the exposure to contagion, and the adults in the family suffering at the same time from continued fever, may be considered as means of diagnosis, or, at least, of leading us to suspect that the disease might not be hydrocephalus; and, if the disease were to terminate in ventricular effusion, as we have seen it do in adults, then it would become hydrocephalus internus indeed, although arising from contagion.

The first part of Dr Cooke's second volume treats of Palsy, and he admits the common divisions into Hemiplegy, Paraplegy, and Partial Palsy. This division is perfectly well founded in fact, and yet it sometimes misleads superficial observers as to the cause of the affection in particular cases. It is natural to refer hemiplegy to an affection of the brain, paraplegy to one of the spine, and partial palsy to the compression of a particular nerve, and yet we sometimes find that the most partial palsies have their origin in the brain. Of this we are assured by two facts, the commencement of complete hemiplegia in very partial palsy, of a finger, or an eye-lid, for example, and a similar local palsy remaining after hemiplegia from apoplexy. We lately examined the body of a young man, who was affected with paraplegia, preceded by numbness and debility of the legs, and terminated by the cessation of the muscular action of respiration, and we found the whole membrane of the cerebellum thickened and diseased, and the cerebellum itself almost fluid, yet the father, who stood by, and was exceedingly inquisitive about the cause of death, would scarcely allow us to open the head, as he was sure it was perfectly sound, for his son never had a pain in it all his life.

Dr Cooke, by his definition of palsy, includes loss of sensation as well as loss of muscular power. These are frequently combined in various degrees, but they also sometimes exist separately, and especially the loss of sensation in the individual organs of sense, except that of touch, is in general independent of any affections of the muscles. There are therefore grounds for the distinction of partial palsies into those of sense and of motion. But the palsy affecting the muscles seems also to be of two kinds, one depending upon an affection of the muscular fibre itself, which does not or cannot obey the stimulus of volition, or other stimuli applied to it, and one where the nervous energy is deficient or impeded in its progress. Of the former kind we have examples in cases of extreme debility and torpor, and of the latter in the partial palsy which remains after apoplexy. The due action of the involuntary muscles is so essential to life, that they can scarcely be affected with paralysis without the most serious consequences. Syncope may be considered a palsy of the heart, and, if it be not transient, sudden death is the consequence. Are the absorbents, the exhalents, or secreting vessels, subject to palsy? By what symptoms are such affections denoted?

We cannot follow our author through his histories of paraplegia, hemiplegia, and partial palsies. When speaking of the causes he gives an abstract of M. Serres's peculiar opinion, which, in our opinion, he successfully refutes.

"Pressure on the brain has for many years past been considered by physiologists as the chief, if not the sole cause, both of apoplexy and of hemiplegia; but M. Serres, a physician of eminence, in a memoir lately published by him in the Annuaire Medico-chirurgicale, denies that pressure, in any case, produces either of those diseases." pp. 69, 70.

"He has shown that blood has been effused in various situations within the cranium, without apoplexy; but he cannot hence fairly conclude that effusion never produces the disease. Since he admits that there is effusion in the meningeal apoplexy, how can he prove, even allowing it to be the consequence of what he calls irritation of the meninges, that the irritation, and not the effusion, is the immediate exciting cause of the disease? If compression by fluids were the cause of apoplexy, M. Serres says there could be no apoplexy without effusion; but the want of logical precision here is evident, unless we grant, what I believe few physiologists would admit, that compression from fluids is the *only* cause of the disease. That some degree of pressure may be made on the brain without producing either coma or apoplexy, may be conceded, as proved by M. Serres's experiments; but it by no means follows that a different or greater pressure would not produce these diseases; indeed, both observation and experiment decidedly show, that compression does sometimes, according to its degree, give occasion, first to somnolency, and then to complete apoplexy. It is a fact perfectly well known, that after the operation of the trepan, pressure on the part deprived of cranium produces these effects; and innumerable instances might be adduced in which compression by depressed bone after accidents, has given occasion to coma and apoplexy.

"These observations are confirmed by direct experiments, which lead to positive conclusions; not to negative conclusions, like those of M. Serres. M. Portal trepanned the cranium of a dog; he compressed the dura mater and the brain, sometimes with his fingers, and sometimes with a bouchon of linen or of wood, and sometimes by water or mercury poured through the cavity made in the cranium. A funnel was adapted to the opening of the cranium, which was filled with water or mercury, so as to produce a graduated compression, more or less strong, upon the brain. In whatever way the experiment was made, it instantly produced the following effects: The animal ceased to bark; if the compression was increased, it became agitated by strong convulsions; if still further increased, a profound sleep took place, the convulsions ceased, and the respiration became stertorous. If the pressure was diminished, the breathing became more free, and the convulsions returned." pp. 84—86.

In the chapters on the Diagnosis, Prognosis, and Dissections, the account of the observations of MM. Rochoux and Riobe is particularly interesting.

Dr Cooke is an advocate for blood-letting in hemiplegia connected with apoplexy, and in this we have practical reasons for agreeing with him. General depletion with local stimulation seems to be the most successful method of cure. It is interesting to observe the gradual return of power to a palsied limb. Muscle after muscle becomes obedient to the will; the recovery always beginning at the trunk, and being slowest in the most remote part. It would seem as if the will were too feeble to penetrate beyond a certain length, but became gradually stronger as some obstacle to its progress was removed. In a very interesting case lately under our care, the patient recovered power over his affected arm, not regularly and progressively, but, as it were, suddenly, and by starts, first for a short time, and then permanently. The sudden and temporary amendments were perceived either immediately after the employment of galvanism or on awakening from sleep. We have observed something similar in amaurosis. A patient, after being galvanized, declared he saw objects for the first time for many months; but he soon relapsed into total darkness, from which galvanism lost the power of restoring even for a time.

Dr Cooke alludes to the use of moxa, but we think he has mistaken its *modus operandi*, which is certainly not by producing a discharge from the part to which it is applied, but by its sudden and intense local stimulus. One of our paralytic patients immediately derived more benefit from it than from any thing he had tried. A patient, long confined to bed by sciatica, on the morning after its application was up and assisting the other patients in the ward; but the eschar formed by moxa does not separate for many days, nor is the discharge ever considerable.

We have tried the Rhus toxicodendron, recommended by Dr Alderson. We thought it useful in keeping the bowels easy, and in one case, that tingling sensation in the limb, which seems the first step towards recovery, was induced; but the amendment proceeded no farther, and the man ever afterwards regretted that his limb had not been allowed to remain in its former state of complete insensibility.

Our experience of the nux vomica is not great. In one case, the powder was given in large doses. It kept the bowels easy, but seemed to have no other effect. It was introduced into practice by Dr Fouquier of Paris on theoretical grounds, from observing, that when given to poison animals, it exerted a specific power over the muscles.

"M. Fouquier was in the habit of giving it in the form of powder and extract, beginning with small doses, and gradually increasing them as far as fifty grains in a day. In a short time after it has been taken, spasmodic contractions of the muscles, he says, in a greater or less degree, or more or less general, are produced. Among the unpleasant effects of the nux vomica, especially in large doses, delirium, a sense of heat and oppression, and anxiety, may be mentioned. Sometimes general tetanus, with loss of speech and the power of deglutition, accompanied with difficulty of respiration, pulsation of the heart, and dysuria, have been experienced; whilst the good effects of this remedy are manifested by a gradual return of power in the paralytic parts." pp. 167, 168.

"M. Fouquier, in a communication to Mr Rose, speaks of the nux vomica in palsy in very strong terms of commendation; and with respect to the form of administering the medicine, observes, that since the specific effects of the nux vomica have been known to him, he has preferred the alcoholic extract in the form of pills, both to the aqueous extract and to the substance in powder; that the effects of the former are more powerful than those of either of the other preparations; and that he begins with one grain twice a day, gradually increasing the dose. He goes on to describe the particular effects of the remedy, which are such as are noticed in the preceding cases. He then says, if too large a dose is given, its effects discover themselves on the healthy members; to obtain a cure it must be administered for a considerable time, and the dose must be so regulated that sensible effects may be daily produced by it." pp. 173, 174.

Dr Cooke lastly describes the various methods proposed for treating the local palsies, especially amaurosis, and he concludes with a notice of the *paralysis agitans* described by Mr Parkinson. There are many varieties of paralytic tremors or convulsions. We saw one obstinate case instantaneously induced by drinking cold water when the body was heated. Another very remarkable instance appeared in a patient on attempting to sit up after continued fever. When lying, she complained of weakness of back, but when sitting, could not, by the greatest efforts, restrain her legs from shaking, and when attempting to walk, staggered, as if affected with St Vitus's dance. She recovered perfectly, from sinapisms applied to the spine.

We need not repeat our commendations of Dr Cooke's undertaking; and we trust that he will subjoin to the whole very copious indexes of the names of authors, with the titles of the works referred to, and of the subjects mentioned.

VI.

A Treatise on the Plague, designed to prove it Contagious, from facts, collected during the Author's residence in Malta, when visited by that Malady in 1813; with Observations on its Pre-

vention, Character, and Treatment; to which is annexed an Appendix, containing Minutes of the Author's Evidence, given before the Contagion Committee of the House of Commons, accompanied by their Report. By Sir Arthur Brooke Faulkner, M. D., &c. London, 1820, pp. 277, and 43.

We lately delivered our opinion concerning the contagiousness of the plague in general. (Vol. XVI. p. 109.) Sir A. Brooke Faulkner, M. D. one of the witnesses examined before the House of Commons, has, in the volume before us, resumed the subject. For this task he is well qualified, having resided in Malta during the last time that island was infected, as physician to the forces, and having had a great share in directing and carrying into effect the measures against it.

His work embraces two principal parts; a history of the origin, progress, and decline of the plague at Malta, as observed by our author, and general arguments and inductions, tending to establish his opinion that the plague is contagious.

The medical topography of Malta occupies the first chapter; the third and fourth contain the general history of the progress of the disease; and the seventh its medical history. While the second treats of the chief causes which have led to error on the question of contagion; the fifth inquires into the insufficiency of such causes, as filth, latent change of the air, or marsh miasmata, or any other cause than contagion, to account for the production and progress of plague; and the sixth is directed to the prevention of the plague. We have no intention of following our author through his details. We have never seen the plague, and the subject, as a general question, has been repeatedly before us. We can express generally our obligations to our author for the valuable documents he has furnished us with, and to express our full coincidence with the conclusions he has drawn from them.

In page 42, our author attempts to settle the meaning of the words infection. and contagion, from their etymologies; but in his advertisement he tells that he has used them indiscriminately. This should have been avoided, but not in the way commonly attempted, for, we would reject the word *infection* as opposed to contagion entirely. It has been used in so many different senses, and so vaguely by authors, that no definition can give it a precise meaning. Contagion, on the contrary, is universally understood, and almost exactly in the same sense. It is a property possessed by certain diseases, of propagating themselves, by exciting a similar disease by immediate or mediate contact, in other individuals disposed to be acted upon by it. Take small-pox as an example. It is capable of being propagated by direct contact; by matter conveyed on the point of a lancet, or on the clothes of a nurse; and by the atmosphere to a certain distance; but in all these ways it acts only on susceptible subjects. Some persons never take small-pox, however exposed to its contagion, and those who have previously had it, generally are rendered unsusceptible of a second attack.

The third chapter alone, in our opinion, sets the question of the contagiousness of the plague at rest.

> "I propose," says our author, "to comprise the arguments and facts collected during my services in Malta, in support of the contagious property of the plague, under the following divisions:
>
> "I. The extension of the disease to Valetta from the infected vessel, San Nicolo.
>
> "II. Its extension to the individuals who were infected by communicating with the first case in Valetta, and to the Augustin convent.
>
> "III. And its extension to certain of the casals, and to the island of Gozo." pp. 42—44.

Malta had not been visited by the plague for *one hundred and thirty-seven* years, a fact which, of itself, establishes, beyond a doubt, that the climate had no tendency to generate the disease. On the 28th of March 1813, the San Nicolo arrived from Alexandria, where the plague was raging when the vessel sailed. Part of the crew died on the voyage. On arrival, this vessel made the regular signal, that the plague was on board. In a day or two after being received into the Lazaretto the captain and his servant sickened and died. On the 10th of April, Dr Faulkner addressed a letter to the governor, expressing his fears that the plague might be communicated from the vessel. On the 14th of April, a girl was taken ill with symptoms of fever, and died on the 19th. Her mother was seized on the 1st of May, her father, Salvatore Borg, on the 4th, and both perished; a visitor, Maria Agius, also died on the 6th; a girl who lived in habits of intimacy with Maria Agius was seized on the 8th; Salvatore Borg's father also on the 8th; another child of Salvatore Borg's on the 14th, and on the 17th, a man who had been eleven days in observation on account of his communicating with Maria Agius.

> "In the above cited instances, the contagion has been traced in a direct line a month and twenty days subsequent to the first entrance of the San Nicolo, and above a month after Borg's first infected child was taken ill in Valetta; added to which, it is proved by official statements, that up to this period, there were no other indivi-

duals, excepting those already detailed, infected in any part of Malta." p. 66.

"About this time the contagion began to diverge in so many directions, in consequence of the unrestrained intercourse of the people, that it would have been extremely difficult, if not impracticable, to follow up the direct line of contaminations, even if the investigation had been earnestly pursued, which I have reason to believe was not the fact." p. 65.

The progress of the vicissitudes of temperature and the deaths in each month were as follows.

	Highest.	Lowest.	Deaths.
April,	71	50	1
May,	80	62	110
June,	84	69	800
July,	86	70	1608
August,	86	70	1043
September,	83	65½	674
October,	83	61	207
November,	71½	58	50
December,	70	46	unknown.

These tables are not very minutely exact, but they are sufficient to shew the gradual increase and decrease of the mortality, and its relation to the temperature.

"A numerous host of proofs to shew that the decrease of the disorder was wholly independent of the state of the atmosphere as to temperature, is derived from its arrestation in several of the casals by restrictive regulations during the period of its widest dissemination in other places. It was, for example, exterminated in casal Lia early in June,—casals Atard, Gudia, Zeitun, Tarxien, Micabiba, and Zurich, in July,—and in Zabbar, Luca, and Paola, in the month of August. It was also stopped in Cospicua, a populous town within the fortifications, in July; and in Vittoriosa, another of the same description, in August. The following extract from the Government Journal of Malta supplies definitive confirmation of all that has been advanced in reference to this subject.—'All' apparir di questa infermita fummo assicurati che il caldo la estingueva, che il decrescir della luna ne sminuiva la forza, che le ruggiade della notte la spegnevano, e che alcuni particolari giorni d'estate la faceano tutto in un colpo svanire. Pero tutte queste cose che si verificarono in Alessandria, in Smirna ed in Aleppo *non furono quasi di alcun effetto in Malta;* ne il caldo la estinse, ne il decrescer della luna porto alcun sensibile giovamento, ne il venir di alcuni giorni particolari la feci svanire.' Finally; when to the whole of this body of facts we add the rapid diminution in the number of attacks following almost immediately upon the rigid enforcement of Police restrictions in the several towns formerly mentioned, and at a period when the contagion had attained to its acme of diffusibility, no doubt, I think, can remain in any

> mind which is open to conviction, that it was to these measures alone the sudden cessation of the disease in those places was immediately to be attributed, and not to any alteration in the atmospheric influence." pp. 176, 177.

The history of the introduction of the plague into the casals or villages around Malta is particularly interesting, but we cannot enter into the details.

Next to the proof of contagiousness derived from the communication of the disease appearing to be dependant upon intercourse, the most convincing is the security derived from seclusion. Our author gives a very striking example of this, in regard to the Augustin convent.

> "This convent, situated in a peculiarly healthful, spacious, and airy part of Valetta, had, from the very beginning, observed the greatest caution to shun communication with the public. It was at length, however, infected, in consequence of one of the servants, who was caterer by occupation, having, in disobedience of public orders, gone into a very contaminated part of the town, called the Manderaggio, and purchased infected clothes. Shortly after his return, he made confession of the circumstance, when one of the brotherhood belonging to this convent, out of compassion, immediately volunteered to attend him, placing himself, at the same time, in strict quarantine with the patient. Both nurse and patient immediately fell victims to the disease, but *no other individual under the same roof was ever assailed.*" pp. 68, 69.

> "In farther proof of the protection afforded by seclusion, an historian (Cavallino) of the former plague, which visited Malta in 1675, observes, that all public buildings, which cautiously shunned intercourse with the community, enjoyed a perfect exemption from the contagion, among which were the prisons, monasteries, and the cavalieri, or inns, occupied by the Knights of the Order, besides all the vessels in the harbour. And in the late plague, the Hospital of Saint John of Jerusalem, the prison, and several public offices and private houses, which early adopted, and steadily kept up, a rigid system of insulation, were no less fortunate." pp. 71, 72.

We shall probably take another opportunity of considering the quarantine laws; and the excellent communications for which we were formerly indebted to Sir A. Brooke Faulkner (Vol. X. p. 137,) supersedes the necessity of entering upon the medical history of the plague at Malta, although much enlarged and improved in the present volume.

VII.

Cases of a Serious Morbid Affection, chiefly occurring after Delivery, Miscarriage, &c. from various causes of Irritation and Exhaustion; and of a Similar Affection, unconnected with the Puerperal State. By MARSHALL HALL, M. D. F. R. S. E. &c. 8vo. pp. 62. London, 1820.

THE industry and zeal with which Dr Hall cultivates his profession are highly commendable; but we fear his ideas of diagnosis are too refined, not merely for routine, but even for reflecting practitioners. We have perused this little work with very great attention, and we cannot say that we have been able to acquire a very distinct idea of the individual character of the malady it is intended to delineate. We are doubtful whether we have often seen it in practice, or rather whether many cases, to which we gave other names, be not referable to it. This difficulty is the more to be lamented, since it is of so much importance in a practical point of view. Dr Hall declares his belief,

> "That the morbid affection in question constitutes a great proportion among puerperal cases, and a great majority among the fatal ones, and, of these fatal cases, many are daily rendered so by a mistaken use of the lancet."

Before we proceed farther, it will assist the conception of the reader to inform him, that the same affection occurs independently of the puerperal state, and has formerly been described by Dr Hall, under the title of *Mimosis inquieta.* From the aphoristic style in which Dr Hall writes, it is not easy to convey his meaning in fewer words: we must, therefore, to do him justice, transcribe his whole description:

> "XXI. This affection appears principally under the following forms; 1. the acute; 2. the more continued; 3. with general symptoms; 4. with some predominant local affection; 5. as the effect, chiefly, of intestinal irritation,—or 6. of hæmorrhagy. The greater number of cases do not, however, admit of being referred to any one of these divisions distinctly or exclusively, but assume a mixed character.
>
> "XXII. When this affection has come on in an acute form, the first symptom has usually been severe and long continued rigor, succeeded by great heat of surface, great frequency of pulse, and some serious affection of the head, or of the abdomen. This was observed in cases I. II. IV. VIII. IX. X. XIX. and it is probable that

rigor occurred in some of the other cases, although unnoticed in the reports; in these there were the other symptoms noticed above.

"XXIII. When, on the contrary, the attack of this affection is slower and more insidious, the rigor is less observed, the heat of surface perhaps absent, and there is throbbing pain of the head, with vertigo in the erect posture, or fluttering and palpitation of the heart, or oppressed, hurried, and sighing breathing, or irritability of the stomach and bowels, &c. as observed in cases V. XV. XVI. XVII. XX. XXI.

"XXIV. Much will depend on the constitution of the patient, and on the cause of the affection, especially the latter. Great intestinal irritation is apt to induce a sudden attack, with rigor and much febrile heat. Serious uterine hæmorrhagy will also produce these effects, as observed in case XIX., in which, however, as is usual, these two causes most probably co-operated. The consequences of profuse hæmorrhagy are well known. The effects of continued irritation of the stomach and bowels, and of protracted and reiterated uterine hæmorrhagy, menorrhagia, or undue lactation, are insidious and protracted; § XXIII.

"XXV. The course of this affection is generally influenced, in like manner, by the constitution, and the cause, and usually varies with the form of the attack. There are, in many cases, frequent changes,—attacks of alarming symptoms,—urgent messages,—sense and fear of impending dissolution, &c.

"XXVI. The symptoms vary in degree, form, and assemblage, in every case. They refer themselves in general to the HEAD, HEART, CHEST, STOMACH, BOWELS, UTERUS, THE MUSCULAR SYSTEM, and to different SEATS OF PAIN. In the following account of the symptoms, I shall briefly enumerate, under each of these heads, the various affections which are apt to occur in this complaint, referring the reader to the cases in the appendix for exemplification, and for the varied manner, catenation, and connection, in which they present themselves to the observation of the physician.

"XXVII. I shall first premise that, of the two principal causes of this affection, Intestinal Irritation, and Uterine Hæmorrhagy, each produces symptoms in some degree peculiar to itself. The former, especially, is the frequent cause of pain of the head, side, iliac region, loins, or some part of the abdomen; the latter, of faintishness, the sense of want of air, gasping, jactitation, sinking, &c. The varied effects of intestinal irritation are amply detailed by the author, in a late essay on the Mimoses. The effects of hæmorrhagy are exemplified in Cases XVI. XVII. But, besides that these two causes generally co-exist, and co-operate, it is remarkable how similar, in general, are their effects. They each seem liable to attack ALL the organs and functions of the body, conjointly or separately. It is, however, in general, the circumstance of EXHAUSTION, which adds REAL DANGER to the otherwise URGENT but LESS SERIOUS symptoms of IRRITATION.

"XXVIII. The symptoms which may be referred to the HEAD are the following:—Severe pain; beating and throbbing; rushing, or cracking noises; vertigo, or turning round of the room, especially on raising the head or assuming the erect position; intolerance of light, and of sound; wakefulness; starting during sleep; awaking hurried and alarmed, with faintness, palpitation, feeling of sinking, of impending dissolution, &c.; being overcome by noise, disturbance, or thinking even, and delirium.

" XXIX. The HEART is, in different cases, affected with palpitation, fluttering, irregular and feeble action; there are beating and throbbing of the carotids, and sometimes even of the abdominal aorta; great rapidity, and sometimes irregularity of the PULSE; faintishness or fainting, urgent demand for the smelling-bottle, fresh air, fanning, bathing of the temples; feeling of impending dissolution; incapability of bearing the erect position, and sometimes early fainting from the use of the lancet.

" XXX. The RESPIRATION is affected, in different cases, with panting, hurry, sighing, great heaving, gasping, blowing, moaning, catching, &c. and, as has been stated, with urgent demand for fresh air. There is sometimes a sense of great and alarming oppression about the CHEST.

" XXXI. There is, in some cases, an IRRITATIVE COUGH,—in violent fits,—or in the form of continual hacking; this cough appears to originate in the larynx or trachea.

" XXXII. The STOMACH is liable to become affected with irritability, sickness, retching, vomiting, hiccough, and eructation; the BOWELS with constipation, or diarrhœa, pain, flatus, distention, &c.

" XXXIII. There are very frequently urgent restlessness, tossing about, and jactitation. In some cases, as in Case XXII., various SPASMODIC AFFECTIONS have occurred.

" XXXIV. The SEATS OF PAIN are usually the head, the side, the iliac region, the loins, the region of the uterus, and the abdomen generally. The pain of the iliac and uterine region, and of the abdomen, is often attended with much tenderness.

" XXXV. Amongst other symptoms should be mentioned the faintishness, the gasping, the feeling of dissolution, &c. of the patient, which sometimes occur after the first and even a moderate bleeding; see Cases III. IV. XIII. XXIII. XXV.; in some instances the patient has expressed the utmost dread of being bled, from the feeling of aggravation of her suffering, or of dissolution induced by it."

We confess we have been greatly disappointed by the chapter on the Diagnosis, as the only additional circumstance indicated by which we may distinguish this affection,—which, in its various forms, is apt to be mistaken, and, what is of momentous consequence, *mistreated*, for inflammatory diseases of the nobler viscera, especially for puerperal phrenitis and puerperal fever,—are the bad effects of blood-lettting and the good effects of glysters.

The result of the whole is, that there appear to occur, especially in the puerperal state, cases resembling inflammatory affections, arising from the combined action of irritation and exhaustion, which do not bear bold practice, but must be treated with caution and gentle means. Of this we are very well convinced; but we see no grounds for considering such cases as a peculiar affection, entitled to have a name as an individual existence in a system of nosology. It is rather a state of the system which is apt to occur in every disease, from mismanagement or untoward circumstances; and, if we are not very much mistaken, some of Dr Hall's cases are of that description. Every practitioner must recollect having met with cases, which he considered inflammations, accompanied with great restlessness, which did not bear blood-letting or stimuli, and in which the *medecine expectante* of the French was the most successful; but it does not follow that these affections were not inflammations. On the contrary, we recollect cases, where the restlessness, quickness of pulse, and heat, increased after blood-letting; and yet, on dissection, the existence of great inflammation was put out of doubt. The reason of this peculiar idiosyncrasy in some patients is not very evident; but we may remark, that we have observed that cases of epidemic fever, which have been treated by copious blood-letting, are exceedingly sensible to all stimuli. If their exhaustion seem to require wine, it must be given with the greatest caution. An ounce or two will excite them; even a slight improvement in diet will cause a relapse; although similar cases, not bled, would bear, nay require, the free administration of wine and nourishment. Exhaustion, especially from excessive loss of blood, is accompanied by distressing irritability, and the nicety of practice in inflammatory affections consists in regulating the quantity to be taken away, so as to conquer the disease, without inducing this state.

Dr Hall subjoins 33 cases; which are classed, as terminating favourably, 18; fatally, 4; fatal effects of blood-letting, 8; and independently of a puerperal state, 4; to which we must refer the reader, as neither a selection nor an abstract would do justice to the author, or be satisfactory to our readers.

PART III.

MEDICAL INTELLIGENCE.

Report of the Royal London and Westminster Infirmary for the Treatment of Cutaneous Diseases, read by Dr Emerson *at the General Annual Meeting, January 22,* 1821.

On the opening of this Infirmary, which owes its existence to your liberality, on the 1st January 1820, the Committee invested with authority to superintend and conduct its affairs, submitted an " Address to the Public," in which the necessity, and the objects of the Institution, were concisely stated. The causes of the prevalence, as well as of the inveterate nature of Cutaneous Diseases, particularly among the lower classes of society, in large and populous towns, are there briefly enumerated. Without trespassing on your valuable time in an unnecessary repetition of the facts and arguments, brought forward in that address, in support of the *utility* of this Institution, we shall content ourselves on the present occasion, in simply adverting to the advantages experienced by the community at large from similar establishments; such as fever hospitals, lunatic asylums, lying-in hospitals, eye infirmaries, &c.; from which also have emanated some of the principal improvements in the medical art, by affording its members, practitioners as well as students, those peculiar opportunities of investigating particular genera of disease, which cannot be expected from hospitals, open to the reception of every human infirmity. The nature of cutaneous diseases is still involved in much obscurity; and it is not, perhaps, too much to assert, that this circumstance may be chiefly attributed to the long neglect of establishing an infirmary for their exclusive investigation and treatment. The principal sources of affections of the skin are the neglect of personal cleanliness, and the want of the proper means of cure; particularly of charitable establishments directed solely to the latter desirable object. A considerable proportion of these diseases, it is well known, are of the most obstinate and most disgusting nature; they often resist for a series of years, sometimes even through life, every attempt at their removal. Others, again, of a less obdurate complexion, but equally offensive to the beholder, and vexatious to the patient, yield speedily (or at least in a comparatively short period) to the use of the sulphureous vapour bath; a mode of cure now for the *first* time *publicly* introduced into this country, and which promises the most essential benefits. Of the former class of cutaneous diseases many instances have already fallen under the care of the medical officers of this institution; some of which have been, to all appearance, effectually cured, and the greater part of them more or less relieved by the above means. Of the second class a great variety of cases have been treated at this infirmary with marked success. Without entering into any unnecessary detail of individual cases, which the nature of this report will not permit, the committee feel great pleasure in stating, that the number of patients admitted from 1st January 1820 to 1st January 1821 is 245. This number appears small compared with that of similar institutions abroad; a circumstance indicative, in our opinion, of the less prevalence of cutaneous affections in this metropolis. The eminent relief and comfort experienced by many indigent families in various parts of this extensive metropolis from the use of the medicated bath, and medicines supplied to them gratis, is the most convincing and satisfactory proof of the utility of this institution. One among many remarkable and instructive cases the medical officers wish, in a general way, to bring under your notice. It was an inveterate instance of the pompholyx, which had resisted the various treatments of several hospitals. It occurred in a young girl; her sufferings were not to be described; but by the use of the bath and some internal medicines she now enjoys a comparative degree of health and comfort; and her tender age renders it extremely probable that the cure may be as permanent as it has been satisfactory. Short as the period has been from its commencement to the present time, opportunities have presented themselves to its professional members of witnessing nearly all the kinds of cutaneous affections. The medical officers are desirous of assuring you, that the strictest attention shall be paid to ensure to the public the full benefit of this institution; and in due time they confidently look forward to lay before it the result of their experience in the treatment of cutaneous diseases. From a faithful record of these highly interesting and instructive histories of diseases, yet little understood, the public will, it is hoped, appreciate the advantages it derives from an establishment, dedicated to the exclusive treatment of cutaneous diseases. The opportunities thus afforded to medical students and practitioners in general of witnessing the nature and treatment of this irritating and formidable class of diseases are daily increasing. The sanction and support given to this institution by the first medical characters of the metropolis are highly flattering to the committee, and strongly expressive of the expectations the public may reasonably entertain of its beneficial effects to society at large. As its funds increase, so doubtless will the means of relief be proportionately extended. The committee, therefore, actuated by the desire of contributing to the happiness of society, by relieving its members, as far as in their power, from the tormenting influence of cutaneous affections; impressed with the advantages already obtained from this institution; and aware that public establishments cannot flourish by the exertions of a few individuals, appeal with confidence to the liberality of the public to give it that encouraging support, of the pretensions to which it is in all cases the best judge.

Royal College of Surgeons in London.—Court of Examiners.

Candidates to be examined for the diploma will be required to produce certificates:—

1. Of having been engaged five years, at least, in the acquisition of professional knowledge.
2. Of having regularly attended two courses, at least, of anatomical lectures; and also, one or more courses of chirurgical lectures; in London, Dublin, Edinburgh, or Glasgow.
3. Of having performed two or more courses of dissection.
4. Of having regularly attended, during the term of, at least, one year, the chirurgical practice of one of the following hospitals, viz. St Bartholomew's, St Thomas', the Westminster, Guy's, St George's, the London, or the Middlesex, in London;—or the Richmond, or Steevens', in Dublin;—or the Royal Infirmary in Edinburgh;—or the Royal Infirmary in Glasgow.
5. And of being twenty-two years of age.

Candidates under the following circumstances, and of the proper age, § 5, are also admissible to examination for the diploma.

Members of any of the legally constituted Colleges of Surgeons in the united kingdom.

Graduates in medicine of any of the universities of the united kingdom, who shall have performed two or more courses of dissection, and who shall have regularly attended, during the term of, at least, one year, the chirurgical practice of one of the above specified hospitals.

These rules are also required to be observed by Candidates to be examined for the Testimonial of Qualification of Principal Surgeon in any service.

Candidates under extraordinary circumstances of professional education, not literally corresponding with the foregoing rules, but deemed by the Court, in effect, equivalent thereto, will be admitted to examination.

Candidates are to observe, that Tickets of Admission only will not be received as certificates or evidence of attendance.

Should doubt of the correctness of any required certificate of age, or professional education, at any time arise, such certificate will be retained in the College for investigation, during the pleasure of the Court; and should a candidate for examination be proved to have practised, or attempted, upon the Court, imposition relating to any certificate or otherwise, he will be refused examination for such period as the Court, according to the circumstances of the case, may judge proper.

By order, Edmund Belfour, *Secretary.*

Cases of Amenorrhœa and Vicarious Menstruations. By John Astbury, *M. D. Borlaston.*

I have attended, at different times, a young lady, from the age of 18 to 23, who never had the catamenia more than once in a year, sometimes once in two years. Steel, in various forms, tonics, change of air, nutritious diet, different emmenagogues, have been tried for a great length of time, without any good effect. At the age of 23, she married to a healthy-looking young man; she has now been married near four years, and has never had the catamenia but once during that period; she has not been pregnant. There is not the least reason to suppose any organic defect in the parts, for when she has had the catamenia, the discharge has been natural, and in sufficient quantity. The defect seems to be in the organs of digestion. She has always been very thin and feeble, her appetite poor, and her digestion weak; her constitution only prepares blood sufficient to feebly support life, without being sufficiently strong to create an overflow.

I have attended another young lady, about 20 years of age, who may be said to have menstruated by the hæmorrhoidal vessels for more than two years, as she had no discharge, during that period, per vaginam. She has had a periodical discharge by the hæmorrhoidal vessels, not regularly monthly, but at the distance of sometimes two months, sometimes three. When she went to stool she has discharged half a pint of blood at a time, which brought on very considerable debility; her appetite and general health, in other respects, were tolerably good. When this disease had continued between two and three years, the extremity of the rectum became relaxed, and protruded through the sphincter ani. Strong astringents, as decoct. cort. querci, with alum, were applied to the part, which had the effect of bracing the hæmorrhoidal vessels, and propelling the blood into the uterine vessels, as she was cured of her complaint, and has menstruated regularly ever since, and perfectly recovered her health. There appears to have been a local weakness in the hæmorrhoidal vessels, and a periodical congestion in them.

Remarks on Toothache, by a Correspondent.

It is cause of considerable surprise, that while toothache is a disease which so often presents itself to the notice of the surgeon, so little has yet been done for its cure. Whether this has arisen from the proverbial indifference with which it is said to be viewed by all but the immediate sufferer, or from a slavish conviction of its incurableness, I shall not determine. It is evident, from the practice adopted in a vast majority of cases, that it is still considered incurable.

Diseases of the teeth are now generally entrusted to a separate order of practitioners; and every sensible person will approve of the appropriation, which, on the principle of the division of labour, found, by experience, to be useful in other professions, is well calculated to improve our knowledge of the science, and our skill in the art. I believe that, accordingly, the operative branch of the art is considerably advanced, and that teeth are extracted with less pain, and with greater neatness, than they were fifty years ago; but I doubt much whether we have obtained proportionate power over the disease, and whether the cure of toothache be not yet a desideratum. The form of instruments, and the method of operating, have undergone multiplied changes, and many improvements have thus been added to our stock of knowledge; but they give us no control over the disease, and we are as far as ever from effecting its cure. In saying this, I mean no disrespect to the suggesters of these mechanical improvements, (and one of them, described in a former number of this Journal, by Mr Hardy, bids fair to be useful.) I merely wish it to be understood, that the extraction of the tooth, and the cure of the toothache, are quite distinct things, and cannot be considered as in any degree synonymous.

The destruction or removal of a member must be viewed as an acknowledgment of the weakness of the art. In other diseases, it is never resorted to, till every remedy has been tried and found ineffectual. In toothache, so far from being the "ultima ratio," it is frequently used at first sight, and, in a large majority of cases, after a very short and trifling application of remedies. I would not be understood as throwing indiscriminate censure upon the operator; the urgency of his patient is generally to be appeased by no consideration but instant relief; but, were surgeons to keep more steadily in view, as their object, the cure of the disease, they would frequently be able to induce their patients to delay at least the use of the tooth-key and forceps.

When we consider the causes of toothache, we see still more reason to doubt the propriety of the present practice. It arises sometimes from the mechanical irritation of a particle of food, sometimes from inflammation of a carious tooth, at others from the inflamed gum, sometimes from sympathy with the chilled extremities, and again, from sympathy with the loaded stomach, or irritated nostril. To treat a disease upon rational principles, we must view it in connection with its cause; and it would seem strange to apply the same remedy (if extraction deserves the name) to cases in which the remote causes differ so materially.

Whether toothache ever does attack any but an already diseased tooth, I am not prepared to say. If it does, why should we remove the tooth merely because it is affected with pain? We possess remedies useful enough in other cases, and they ought surely to be first resorted to. Let us view the disease as rational pathologists, and not merely as mechanics, however nice and adroit in the handling of tools. It is frequently alleged by patients, that because a tooth is carious, it ought necessarily to be removed as a useless member, and as ready to contaminate its neighbours. It remains, however, to be proved, that a carious tooth is useless, injurious, or even necessarily painful; indeed, every day's experience contradicts the assertion. Many individuals having several of such, suffer little or no inconvenience from them. The teeth decay, indeed, but so gradually and so imperceptibly, that their possessor hardly suspects it; and sometimes the decaying process becomes stationary, and advances no farther. These individuals are liable to attacks of toothache occasionally, but perhaps not oftener than once or twice a-year, and then from some exposure to cold or moisture, which is easily to be guarded against by caution.

The treatment of this disease naturally divides itself into two parts, the removal of the present paroxysm, and the cure of the caries which is so generally observed in the pained tooth. I am unable to propose any treatment under this latter head; my observation has been too limited for this purpose; but I would call upon those whose opportunities and abilities are equal to it, to direct their attention to the subject, as one well deserving of their investigation. For the relief of the paroxysm many remedies have been proposed, and some have been found efficacious; but it is generally observed, that what is useful to one patient is of no advantage to another. This arises in a great degree, as I cannot help thinking, from indiscriminate prescription, without that steady attention to the cause of the affection which can alone produce successful practice. When the pain arises from the irritation of an extraneous body, the indication is evident; it must be washed out, and then the pain will generally cease. Should it still continue to annoy the patient, there will be no need for extraction; an emollient, a stimulant, an opiate, applied to the pained part, will often procure ease. Though inflammation has supervened, still extraction will not be indispensable. Inflammation, we should always recollect, is not an interminable affection, but may of itself subside after a longer or shorter duration. Whether it exists in the tooth or gum, (and particularly if in the latter,) it ought to be treated, as it is in other parts of the body,—by evacuants. Bleeding from the gum, either by leeches or by the gum-lancet, ought always to be had recourse to. Leeches are on several accounts more advisable; but, from the antipathy which most people feel to their application in such a place, we must substitute the lancet. Such treatment will often give immediate relief, or, at least, it will shorten the duration of the disease, or prevent the formation of gum-boil, an affection so tedious and distressing.

I trust I shall be excused in mentioning a form of toothache, or rather a stage which it sometimes reaches, which appears perplexing, but which readily yields to the appropriate treatment. In this case, the pain continues for days or weeks without being very urgent; but at last a general unwellness supervenes, which is probably pyrexia somewhat modified. They who have seen or felt the affection will easily recognize it, and perhaps it may be styled odontalgic erethism.

General bleeding, purgatives, and quiet, are requisite to remove the local and constitutional symptoms.

I have no intention, by these remarks, to condemn the practice of extraction. In all cases where the tooth is loose, where it is permanently painful, where a large surface is diseased, or where any idiosyncrasy exists, the tooth ought certainly to be removed. I only contend, that extraction is much less frequently necessary than is generally thought; that it ought to be viewed as a last resource; and that it is not a remedy, but uniformly bears on its front an acknowledgment of the weakness of medicine.

Observations on the Treatment of Gout. By A. Veitch, M. D.

From the frequent occurrence of gout in this neighbourhood, I have, for some time, paid more than ordinary attention to the treatment adopted in that disease, and having found such decided benefits from the use of local as well as general blood-letting, but particularly the former, that I have been induced to give it publicity, through the medium of your valuable Journal, that a trial of its effects may be more widely extended, and some of your more able correspondents induced more closely to investigate the *modus operandi*, which, if it tend to a more perfect knowledge of this mysterious disease, my object will be attained. It is by no means my present intention to offer any remarks, with a view to the illustration of any opinions I may entertain respecting the cause of this disease, though they may appear necessary, when so widely differing from the practice of the present day, but as that would lead into a longer detail than what I purpose by the present communication, suffice it for me to state, that I have, like others of my professional brethren, tried, and seen tried, in vain, so many and so various means, that I am doubtful whether the remedies have not oftener been worse than the disease itself; and it is no less painful to see men, in all ranks of life, daily swallowing the ephemeral specifics of the day, to the ultimate ruin of their constitutions, and substituting temporary cure for permanent mischief, without having it in our power to counteract the deleterious effects of these pernicious drugs. The following plan, however, has at least this advantage, that we are aware of what is doing, and have it in our power to regulate the means, according to the age, strength, and constitution of our patient. But, after every trial which I have made of it, no bad effects were ever produced, even in the most debilitated; on the contrary, it has never failed, when properly administered, and I am every day more persuaded of its beneficial effects.

I am aware, that the profession are not to be told, that general as well as local bleeding has before been recommended, tried, and abandoned; but, I am persuaded, it has been abandoned only in consequence of misapplication, and upon its proper application its success chiefly depends.

Leeches, from the nature of the disease, are perhaps the best local application, and it is my usual practice, as soon as the patient begins to feel a fit of the gout coming on, and when its determination to a certain part is ascertained, by the commencement of *pain* in that part, immediately to apply four or five leeches, near to, or upon the part affected, though I have seen an attack on the knee entirely removed by the application of leeches to the foot. To the gout, the greatest attention, however, is necessary, not to apply them after *inflammation* has commenced in the part. The presence of *pain only*, and *not* of *inflammation*, is the time when they ought to be applied; if this is not attended to, the paroxysm, in place of being diminished, will be increased. On the contrary, by paying strict attention to this, the paroxysm will altogether be prevented, as well as its recurrence, by a timely reapplication, (if it should be found necessary by the return of pain.) Should, however, the swelling, pain, and also the *inflammation*, have come on so rapidly, or there has been a delay of the application, we must wait till the *inflammation* has somewhat subsided, before we ever apply the leeches; after which all the good effects will follow, and the hitherto suffering patient will in half his usual time regain the use of his legs and feet. In the event of the head, heart, lungs, or stomach becoming affected, general, as well as topical bleeding, combined with blisters, and calomel purgatives, will prove equally efficacious. I could give many cases both of old and young gouty subjects, who have found the most decided relief from this plan of treatment. In young persons, and those who have not had gout, were general as well as topical blood-letting, together with other antiphlogistic means, strictly adhered to, on its first commencement, they would have little cause to fear a second attack. An able and learned physician seems to have had similar ideas when in his (Clarke's) Compendium Praxeos Medicinæ, he says, "An florente ætate, viribusque minime labefactis, prima morbi accessione, sanguinis missio?" And the old gouty patient will feel many of his sufferings alleviated by the timely application of this *local* method; and when the limbs have become stiff from repeated attacks of gout, and the formation of concretions on the joints, "An sarsaparillæ decoctum acido nitrico et hydrargyri preparationes ad salivæ fluxum lenem ciendum?"

Alford, Lincolnshire, 24th Jan. 1820.

Suggestion respecting the possibility of Destroying Cancer, by the application of Intense Cold, communicated to the Editor by a Medical Friend.

An expedient has suggested itself to my mind, by which I think that the application of artificial cold to a diseased part might be rendered very manageable: That is, by employing masses or plates of metal, cooled down to the requisite degree in a frigorific mixture, and then applied, for a sufficient time, to the part upon which it might be wished to induce mortification. I suppose that this effect would certainly be induced, by the application of heat, after withdrawing the cold application.

Such metallic masses might be formed to any shape or size that might be wanted, and would have the advantage of limiting the application of the cold correctly to the surface intended.

The section of Van Swieten, which I mentioned to you to-day, upon the subject of cancer, is 499. His speculation about curing the disease, by inducing mortification, commences with the words, "Sed an non possit totus cancer emori?" or, in the translation, "But is it not possible for a cancer to mortify?" and is continued to the end of that paragraph. The view he takes of the subject seems most sound and rational; and it appears to me that we possess an agent, in artificial cold, sufficiently powerful to execute his views. Having barely suggested the idea, I shall content myself with recommending it to your more mature deliberation.

It would seem to correspond pretty correctly to what Van Swieten was in quest of; but in deep-seated diseases, where the preservation of skin by the knife so much contributes to the cure, it would seem to be less suitable. In more superficial affections, or in prominent tumours, especially those with circumscribed necks or bases, it may have fewer disadvantages.

Utility of the Piper Cubeba in Leucorrhœa, communicated by Dr S. TRAILL *of Liverpool.*

HAVING proved the utility of the Indian remedy *piper cubeba*, in many cases of blenorrhœa, I was led by analogy to try it on several persons labouring under leucorrhœa, and am satisfied, that it is a valuable auxiliary in this troublesome disease. In every instance it has mitigated the violence of the complaint, and in several cases has removed it. I have administered it in doses from 1 to 3 ʒ of powder; but many persons cannot take more than ʒi. without experiencing nausea; and ʒij. given twice or thrice a-day, will generally be found sufficient. As far as my experience goes, it is most useful in old and obstinate cases of blenorrhœa: in one recent case it seemed to have a tendency to excite hernia humoralis.

Remarks on Coffee as an Expectorant, by JAMES ROBINSON SCOTT, *F. R. S. Edinburgh.*

As that state of the bronchial membrane, in which there takes place a pretty copious and free secretion of mucus, is unfavourable to the continuance of certain paroxysms of asthma, it becomes desirable to produce such a state, the symptom or indication of which will be as above, and therefore various medicines called expectorants are used. Coffee as a palliative in asthma has been long known. Some think it chiefly acts as an antispasmodic; but I was about a year ago forcibly struck with its singularly sudden operation as an expectorant in my own person; I found almost every expectorant fail in its effect but coffee. A friend observed and called my attention to the fact, that the *moment* I swallowed about half a tea-cupful of coffee without milk, I expectorated freely. I have since that time derived great advantage from its use, but I *always* find that the expectoration *instantly* succeeds to the introduction of it into the stomach, however dry or even sore the bronchial membrane may be. No other medicine of the class of expectorants operates at all so speedily on me as coffee. How closely then must nervous sympathy be connected, and how quickly the nerves act over secretion?

Observations on the Preparation of Soporific Medicines, from common Garden Lettuce, by Mr John Young, *Fellow of the Royal College of Surgeons of Edinburgh.*

There is often a long repose between the acquisition of knowledge and the application of it to useful purposes; and it sometimes happens that notices of what might be useful are met with by those who are desirous of contributing to the advancement or revival of useful science, in the works of authors who flourished in remote ages. Such notices or suggestions have frequently been improved, or have given rise to new ideas in the mind of succeeding authors: But there is no branch of medical science in which less progress has been made, than in the knowledge of diseases and the means of cure. This may be observed from the writings of medical authors of the present age, in which there is a constant reference to the established doctrines, or hypothetical cogitations of preceding authors, even to the remotest periods of scientific research: And it is no small recommendation to the work of a modern medical author, that it has copious references and marginal notes. This indicates the appearance, at least, of much study, both in point of reading and of thought: But it is the very essence of book-making, and when a man sits down to amuse the world with his lucubrations without this essence, he is not sure, however new and delightful his idea may appear to himself, that it may be already developed in the pages of the fathers of medicine, who have not only handed down to us the knowledge of all the diseases which we meet with, but also the means of cure. With regard to the various means of cure transmitted to us, some may be said to have gone out of use, some to have come into fashion. While others, which have only been hinted at by the ancients, as possessing useful properties, have never been brought into common practice. Among others, the Lactuca sativa, or common garden lettuce, had long been known to possess narcotic properties. It does not appear, however, that a substance possessing all the valuable qualities of opium had ever been extracted from it, and it was chiefly from tradition that its effects were known, especially by observing, that people were rendered sleepy by eating old lettuce.

In the year 1792, Dr R. Coxe of Philadelphia began to try some experiments, to determine the quality and nature of the milky juice which exudes from the common garden lettuce when wounded, which convinced him of the analogy between the common officinal opium and the milky juice of garden lettuce. And, in the year 1810, Dr Duncan, sen. published his Observations on the Preparation of

Soporific Medicines from common Garden Lettuce, in the first volume of the Memoirs of the Caledonian Horticultural Society. In the second edition of his Observations on Pulmonary Consumption, published at Edinburgh 1816, his words are, "Of all the medicines which I have employed for alleviating cough in phthisis, and, indeed, as a sedative in many other diseases, next to opium, I have found no article so beneficial as that substance which some have lately denominated lettuce opium, and which I termed Lactucarium." And in another part of the same work, he states, that, as a substitute for opium, he never employed one from which he had seen so great benefit as from the preparations formed from the inspissated white juice of the common garden lettuce.

Medical practitioners often have to regret, that there are particular circumstances which render the use of opium improper, however modified the preparation of that drug may be. In many cases, where the preparations of opium are used for procuring sleep, alleviating pain, and in allaying inordinate action, particularly troublesome cough, either sickness at stomach, confusion of head, or a state of constipation, is induced; and, in some cases, where inflammation prevails, it is aggravated by opium.

The discovery of a medicine, possessing anodyne or sedative properties, without producing the distressing consequences that follow the use of opium in certain constitutions, has long been a desideratum. And, as lactucarium appears to possess these properties, it is important that the composition and pharmaceutical preparations of this article should be well understood by apothecaries, especially as it has but lately been introduced into medical practice. Therefore, without any reference to the particular diseases for which it may be prescribed, it is the object of this communication to show, that the dried milky juice of lettuce or lettuce opium, as collected by Mr Young's process, from which lactucarium is obtained, contains a very great proportion (not less than one-half) of a substance resembling caoutchouc or Indian rubber, which is neither soluble in water nor alcohol, and which must be separated. For, like opium, the medicinal properties reside in the extractive matter obtained from lettuce opium by the action of water and alcohol.

The lettuce opium, with which apothecaries have been supplied, as prepared by Mr Young, must be subjected to a pharmaceutical process before the substance, to which Dr Duncan has given the name of Lactucarium, can be obtained. The lettuce opium, in the recent state, is certainly fit for making the tincture or lettuce laudanum. But it must be recollected, that, instead of one ounce of the prepared lactucarium to the pound of diluted alcohol, not less than two ounces of the lettuce opium is required for making lettuce laudanum equal in strength to that prepared by Dr Duncan's process; and that, when intended to be given in substance, in the form of pills or powder, or used in extemporaneous prescriptions in combination with other medicines, the extract of lettuce opium or lactucarium ought to be kept in the shops of apothecaries.

With regard to the dose of this medicine, it may be observed, that from one to five grains of prepared lactucarium has been given to adults. But, like other narcotics, the dose must be regulated by the judgment of the practitioner.

Officinal Preparations.

1. Lettuce opium, dried milky juice of garden lettuce.
2. Lactucarium, extract of lettuce opium.
3. Tincture of lactucarium, or lettuce laudanum.
4. Lactucarium, or lettuce opium pills.
5. Lactucarium, or lettuce opium lozenges.

Formula tincturæ lactucarii.

℞ Succi lactei exsicci Lactucæ sativæ uncias duas.
Alcoholis diluti libram unam.
Digere per dies septem et per chartam cola.

Lactucarium Præparatum.[*]

℞ Succi lactei exsicci Lactucæ sativæ libram unam. Alcoholis diluti libras octo. Digere per dies quatuor, et effunde tinctura. Mmagma residuum coque ex aquæ distillatæ libris sexdecim per horæ quadrantem et decoctum adhuc fervens, per linteum cola. Hanc coctionem et colationem cum pari quantitate aquæ distillatæ repete, et liquorem per vaporationem redige ad mellis liquidioris spissitudinem. Alcohol è tinctura distillatione abstrahe, donec similiter spissescat. Tum liquores sic spissatos permisce, et in balneo aquæ ferventis muriate sodæ saturatæ, redige ad idoneam crassitudinem.

Dissection of a Human Monster. By JAMES MURDOCH, *M. D. Fellow of the Royal College of Physicians, and Lecturer on Midwifery.*

MRS GRANT, Shoemakers' Close, Canongate, was delivered, on the morning of the 7th of May 1819, after an easy, though preternatural labour, in which the feet presented.

According to her own calculation, labour had commenced at the 8th month of utero-gestation, and the child being small, little difficulty was experienced, except when extracting the abdomen through the os externum, which arose from that cavity containing a considerable quantity of a fluid.

The child was born alive, and continued to live about one hour;—before death, the limbs became of a dark purplish hue, and the breathing was performed by gasps.

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[*] For the other preparations of this medicine, see Dr Duncan's Observations on Pulmonary Consumption. 2d edit. 1816.

External Appearances.

Head, chest, and upper extremities, natural; lower extremities of the natural size, but club-footed.

The abdomen was of an uncommon bulk, very soft to the touch, and evidently containing a large quantity of some fluid, which occasioned a considerable flattening when the child was laid on its back. On a slight examination, it appeared to be contained in two or more sacs, the larger occupying the epigastric, umbilical, and lumbar regions; the lesser the hypogastric chiefly, which, from its flatness and depending position, covered the symphysis pubis, stretching as far down as the middle of the thighs. There was no vestige of an anus, or of external organs of generation.

The umbilical cord, consisting of one artery and one vein only, was inserted into the parietes of the abdomen, nearer the scorbiculus cordis than it is generally found, the vessels entering in a slanting direction, and proceeding downwards and upwards first, and then upwards, to the liver, through which it appeared to be ramified in the usual way. From this particular insertion, the root of the cord occupied a greater space than usual, having immediately under it a small opening, as if part of the abdominal parietes had been wanting.

Internal Appearances.

Having first laid open the under sac, which hung over the symphisis pubis, about a pint of yellow-coloured serum was discharged; the anterior walls were very thin, having a yellowish tint like the fluid itself; the posterior walls were very thick, and possessing a hard gristly feel; both were connected together by two small, but very strong ligamentous bands, about the thickness of an ordinary sewing silk thread.

On laying open the upper or larger sac, a fluid of similar appearance was evacuated to the amount of about three pints. Examining now more attentively the posterior wall of the under sac, a slight fluctuation could be discerned; and upon cutting through which, a third sac was laid open, containing a small quantity of a fluid like to the former, and extending from the under edge of the insertion of the umbilical cord downwards towards the hypogastric region, and then slightly upwards and outwards, towards the upper part of the iliac region.

At the termination of this sac, and communicating with it by an opening capable of admitting a surgeon's probe, was found a fourth sac, considerably smaller than any of the others, but filled with the same kind of fluid.

The stomach was next examined, and found to be of the ordinary size, but, from a contraction near the pyloric extremity, presented an appearance of being a double stomach. This organ was perfectly natural at the cardiac extremity, but completely impervious at the pyloric extremity.

The intestines throughout were uniformly of the same size, having a diameter equal to that of a common-sized goose-quill, but presenting no characteristic marks betwixt larger and smaller intestines.

The upper extremity of the duodenum was connected to the posterior surface of the smaller sac of the stomach through the medium of cellular membrane only, but perfectly impervious, and having no communication whatever with that organ.

Tracing them downwards, their termination was found to be in a cul de sac in the under and left side of the umbilical region. They were of the usual length, and when cut into, contained, throughout their whole extent, a tough substance of a greyish colour, having the consistence of coagulated lymph.

Liver.—This organ was remarkably small, not exceeding one-fourth of the ordinary size, presented a natural appearance, but was found to adhere partially to the stomach; when cut into, a little moisture exuded from the divided edges, which, to the taste, was perfectly insipid.

Gall-bladder.—This, like the liver, was very small, but no duct could be found, after a very minute examination, communicating with it either from the liver or intestines.

Spleen, pancreas, and kidneys, presented a natural appearance.

The bladder and the whole of the internal organs of generation were wanting.

The intestines, and part of the umbilical cord, are in my possession.

Edinburgh, March 15, 1821.

Reply from Dr HASTINGS *to a Passage in the Review of his Treatise on the Inflammation of the Mucous Membrane of the Lungs.*

As it is not clearly understood that many of the cases mentioned in Dr Hastings' Treatise on Inflammation of the Mucous Membrane of the Lungs were not under his own management, he begs the Editor will allow him to state, that most of those which are related as coming under his observation before November 1818, were noted down by him during his residence as house-surgeon in that Infirmary in the years 1812, 1813, 1814, and 1815. The treatment of some of these cases is not particularly detailed, because they were received under the care of the physicians in the last stages of the disease, and were barely related in Dr Hastings's work, with the view of exemplifying the changes which, under certain circumstances, take place in the structure of the lungs.

Extract of a Letter from J. INGLIS NICOL, *Surgeon, Inverness, to the Editor.*

FROM the interest you take in every thing that tends to improve our profession, I am sure you will be pleased to hear that an association has been formed in the capital of the Highlands, under the designation of the Medical Society of the North, whose objects are the improvement of the profession in all its departments. This society, which now consists of upwards of 30 members, was formed in 1817, but intimation was withheld until we saw how it prospered. I am now happy in being able to inform you, that we have, with very few exceptions, met regularly every month since the commencement, and have received several interesting communications, which, in all probability, would never have been thought of but for this plan of exciting members to industry. Our library is growing, and, though it consists chiefly of periodical publications, with a few standard works presented by members, it nevertheless disseminates a great mass of information among medical practitioners, to whom access to professional works would otherwise be difficult. A few specimens of morbid structures have also been collected.

Journal de Physiologie Expérimentale. Par F. MAGENDIE, *M. D.*

IT is with the greatest satisfaction that we announce the commencement of a journal, specially devoted to so important a branch of the science of our profession as Experimental Physiology, and to be conducted by one who has approved himself so able a labourer in that field as Dr Magendie. We cannot promote it more effectually, than by quoting a paragraph or two from the Prospectus.

"Je recevrai donc avec reconnaissance et je placerai dans le recueil que j'annonce, tous les travaux physiologiques, toutes les recherches de médecine, qui, fondées sur des observations précises, des expériences exactes, et qui dictées par un esprit sévère, avant tout ami de la vérité, me paraîtront propres à éclairer les phénomènes de la vie.

"Un avantage qui distingue la plupart des journaux consacrés aux sciences physiques, c'est d'être rédigés par des savans qui s'efforcent de les enrichir de leurs propres découvertes, et qui par là même, sont plus aptes à juger de celles des autres. "Les travaux que j'ai publiés sur la physiologie et la médecine, me donneront peut-être quelques droits à la confiance du public pour la rédaction du Journal de Physiologie expérimentale.

"LE JOURNAL DE PHYSIOLOGIE EXPERIMENTALE se composera de quatre numéros par an, qui paraîtront régulièrement tous les trois mois.

"Chaque numèro contiendra six feuilles d'impression in-8°, et même davantage si l'abondance des matières le nécessitait. Des planches y seront ajoutées toutes les fois que cela sera utile.

"Les quatre numéros formeront un volume à la fin de l'année, conséquemment l'on ne pourra souscrire pour un numéro détaché.

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Dr Vetch has been elected One of the Physicians to the Royal Infirmary for Cutaneous Diseases, vice Dr Emerson. Dr Ashburner was at the same time elected to a similar situation.

The venerable Dr Jackson has lately visited Constantinople and the Ionian Isles, to investigate the subject of Plague; and Gibraltar, Cadiz, and the South of Spain, to investigate the subject of Yellow Fever. He is about to lay the result of his labours before the public.

A TREATISE on DYSPEPSIA; or, Indigestion. By J. Woodforde, M. D. Castle Cary, Somerset, 8vo. 2s. 6d. sewed.

In the Press, and will shortly be published, The Principles of Forensic Medicine, explained, illustrated, and applied to British Practice; by J. G. Smith, M. D.

THE

EDINBURGH MEDICAL AND SURGICAL JOURNAL.

No. LXVIII.

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Communications have been received from Drs Marshall Hall and Andrew Smith; and from Messrs Michael Dawson, T. Le Gay [illegible]ewerton, J. Fosbroke, O. Telfair, and Cameron.

We have received for Review:

An Essay on the Epidemic Cholera of India, in two volumes, Vol. I. By Reginald Orton, Assistant Surgeon of his Majesty's 34th regiment. 8vo. Madras, 1820. pp. 421.

An Account of the Rise, Progress, and Decline, of the Fever lately epidemic in Ireland; together with Communications from Physicians in the Provinces, and various official documents. By F. Barker, M. D. Professor of Chemistry, and J. Cheyne, M. D. Physician General. 2 vols. 8vo. Dublin, 1821. pp. 500 and 687.

A Treatise on Indigestion and its consequences, called Nervous and Bilious Complaints; with Observations on the Organic Disease, in which they sometimes terminate. By A. P. W. Philip, M. D., F. R. S. E. 8vo. London, 1821. pp. 363.

Observations on Derangments of the Digestive Organs; and some Views of their Connection with Local Complaints. By William Law, Fellow of the Royal College of Surgeons of Edinburgh. Edinburgh, 1821. 8vo. pp. 156.

Practical Observations on the Symptoms, Discrimination, and Treatment of some of the most important Diseases of the Lower Intestines and Anus, &c. &c. By John Howship, Member of the Royal College of Surgeons, in London, &c. &c. London, 1821. 8vo. pp. 234.

Peptic Precepts, pointing out agreeable and effectual methods to prevent and relieve Indigestion, and to regulate and invigorate the action of the Stomach and Bowels. By the Author of the Cook's Oracle. London, 1821. 18mo.

Practical Observations on the Use of the Cubebs, or Java Pepper, in the Cure of Gonorrhœa, with cases. By Henry Jeffreys, Esq. Senior Surgeon of the St George's and St James's General Dispensary, &c. London, 1821. 8vo.

A Physiological Essay on the Sensibility of Animals, being the first part of a Series of Enquiries on the Nature of Life. By G. W. London, 1820. 8vo.

Advice to the Physician, the Surgeon, and the Apothecary, and to their Patients, after the manner of Dean Swift. By a Physician. London, 1821. 8vo. pp. 73.

A Letter addressed to the Legislature on Vaccination. Clifton, 1821. 8vo. pp. 14.

Remarks on the Expediency and Practicability of a Union of the Royal Colleges of Physicians and Surgeons in Edinburgh. Edinburgh, 1821. 8vo. pp. 16.

Address to the Public, relative to some supposed failures of the Cow-pox, at Repton and its neighbourhood, with Observations on the Efficacy and General Expediency of Vaccination, and on the injurious consequences of Inoculation for the Small-pox. By B. Granger, Surgeon. Burton-upon-Trent. 1821. 8vo. pp. 34.

Seventh Annual Report of the Directors of the Glasgow Asylum for Lunatics, 4th January 1821. Glasgow. 8vo. pp. 35.

State of an Institution near York, called the Retreat, for Persons afflicted with Disorders of the Mind. York, 1820. 8vo. pp. 29,

Copy of the Report to the Secretary of State for the Home Department from the National Vaccine Establishment, dated 12th April 1821.

Nouveau Journal de Medecine, redigé par MM. Beclard, Chomel, H. Cloquet, J. Cloquet, Desormeaux, Guersant, Marjolin, Orfila, Ach. Richard, et Rostan,—to March 1821 inclusive.

Revue Médicale, Historique et Philosophique. Par MM. V. Bally, Bellanger, F. Berard, Bertieu, Bousquet, Delpech, Desportes, Double, Dunal, Esquirol, Gasc, Giraudy, Jadioux, Laurent, Nicod, Prunelle, Rouzet. To February 1821 inclusive.

THE

EDINBURGH

MEDICAL AND SURGICAL JOURNAL.

1. JULY 1821.

PART I.

ORIGINAL COMMUNICATIONS

I.

Contributions to Morbid Anatomy. No. II. By ANDREW DUNCAN, Jun. M. D. F. R. S. ED. Fellow of the Royal College of Physicians, and Joint Professor of the Theory of Medicine in the University of Edinburgh.

THE value of an accurate record of cases, by which we are enabled to compare the symptoms preceding death with the appearances discovered on the examination of the body, was never more highly appreciated than at present. Morbid anatomy contributes materially to the knowledge of the functions of the organs of the body in health, and is the surest foundation of all our pathological investigations. To possess interest, it is by no means necessary that the fact observed should be supposed to be unexampled, or that the reporter should possess a series of instances, or should enter into extensive speculation concerning its causes and effects. The first is now rarely to be expected; and the others require greater opportunities, or more leisure, than are possessed by many. But almost every attentive practitioner has it in his power to add his mite to the general stock of information derived from this source, as each case has some peculiarity connected with it, which confirms or corrects conclusions drawn from preceding observations; and by preserving individual cases, the best materials are furnished for the methodical compiler, or the ingenious theorist, to digest or explain.

In hospital, as well as in private practice, I have had opportunities of making various pathological observations, which seem to me not unworthy of being preserved and published. In grouping together various morbid affections of the same organ, and in subjoining occasional reflections, I merely wish to facilitate the comparison of analogous facts, and to point out those circumstances which, at the time of recording the facts, appeared to me most interesting. Some of the hospital cases are detailed with greater minuteness than may appear necessary; but I was unwilling to abridge too much the authentic record of the journals; and I have to regret that I have not always preserved, in my notes, the names of the gentlemen who assisted me in drawing up the histories of the cases, or in examining the bodies.

CASE I.—*Disorganization of one Hemisphere of the Brain, in consequence of a Fall on the Head, unattended with symptoms of Mental Affection, Inflammation, or Palsy.*

G. L. æt. 30, was admitted into the hospital February 23d, on account of constant pain in his head, always severe, but varying at times in intensity, and of loss of sight to such a degree, that he could just distinguish day from night. The pupils of his eyes were much and permanently dilated, not contracting in the slightest degree on sudden exposure to a strong light. His hearing was also somewhat impaired, and he walked with difficulty. He had also a partial loss of memory. His pulse was perfectly natural. Appetite keen. Digestion good. Tongue foul. And he said he had at times increased thirst, and was disposed to costiveness.

These complaints were induced suddenly about four months ago, when, being intoxicated, he fell from a height upon his forehead, and remained for some hours insensible on the ground, exposed to cold and wet; but he had no distinct recollection of the circumstances connected with the accident.

For some time after it, his head was severely affected; but the pain gradually left it, and did not return till a short time before his admission into the hospital. His blindness, on the contrary, uniformly increased.

He had had blisters applied to his head, a seton inserted in his neck, and occasional purgatives, without receiving any marked or permanent benefit.

While he remained in the hospital, there was no material alteration of the symptoms in consequence of any thing that was tried. His headache sometimes remitted a little, at other times was so severe as almost to drive him distracted; but, upon the whole, it grew worse. He seemed to refer it chiefly to his forehead.

In conversing with me, he was always very distinct, and seemed to have suffered no loss of intellectual power; but it appeared, from the nurses and other patients, that his memory was partially impaired, for example, that he did not remember the name of his wife until he was reminded of it. The state of his vision also varied a little; and on the evening of the 24th of March he discerned the light of a candle, which he had not been able to do for some time; but in a few days afterwards he was reported as being totally blind. After dinner, on the 26th February, he had a fit, and fell to the ground in a state of insensibility, which lasted about two minutes; and he remained confused for some time afterwards. On the 1st of April, also after dinner, he had a fit, which lasted about ten minutes, during which he was insensible, but struggled to get out of bed. He now became impressed with the idea that he should not recover, and wished to return to his family, in Fifeshire, before he died; and he fretted so much, that I was obliged to consent to his leaving the hospital, although I did not think that he could possibly reach home, to which he prepared to go in a vessel from Leith. He went to Leith in a coach on the 8th of April, and bore the shaking apparently well, but died there on the 10th.

The head was opened on 12th April, in my presence, by my friend Dr Kellie, who had seen him on the day of his death.

In removing the scalp nothing unusual was perceived; but, when forcing off the upper half of the cranium, it appeared to have had remarkably little connection with the dura mater, as it sprung off and fell to the ground as soon as the small points of bone, which had not been sawn through, were broken asunder.

On the dura mater on both sides of the longitudinal sinus, and lying parallel to it in lines about an inch distant from each other, there were a number of small round eminences, (glandulæ Pacchioni?) and on the inner side of the calvarium were deep pits, as if scooped out, corresponding to them.

The dura mater adhered to the tunica arachnoidea and pia mater along the sides of the longitudinal sinus more firmly than usual, and the inner membranes seemed thickened.

The upper portion of the right hemisphere of the brain was cut off in the common way. The brain on this side was natural in appearance, but unusually firm.

The ventricle evidently contained fluid; and on opening it, about three ounces of perfectly limpid serum were evacuated. The right corpus striatum and thalamus opticus appeared healthy.

On cutting into the left hemisphere of the brain, it was found to be very much diseased, almost the whole of the medullary substance, especially in the posterior lobe, being soft, gelatinous, semitransparent, and of a bluish colour. Near the lateral ventricle, but more superficial, there was a considerable cavity, containing a considerable quantity of yellow grumous matter, like pus coagulated, or from which the water had been absorbed. The disease occupied the whole central part of the hemisphere; but the surface and cineritious substance in general did not seem much altered.

The cerebellum and medulla oblongata were healthy.

The optic nerves, as far as they were traced, were healthy.

The same want of cohesion between the dura mater and the cranium existed in the lateral, posterior, and anterior parts of the lower half of the skull, but was less remarkable in the basis.

The skull itself was in general thinner than common, and had less diploe, so that it was considerably transparent. The outer table was in every respect natural. The sutures were not examined. The inner table, however, seemed to be undergoing the process of absorption. The surface was slightly rough, as if it had been acted upon by a weak acid; and it was covered between the digital impressions produced by the pressure of the convolutions, by short points of bone, more numerous and prominent at the inferior portion of the left parietal bone, as if the skull had been left of its original thickness where that pressure had not acted. Also the process of the frontal bone, which corresponds to the fossa Sylvii, terminated in a thin sharp lamina; and the anterior and posterior clinoid processes were sharp and scabrous.

The circumstances in this case most deserving of notice are, the severity of the symptoms immediately succeeding the accident, their subsequent remission, with the exception of the blindness, which gradually increased, and the extensive disorganization of the brain observed in the body.

Whatever was the cause of the intense headache which immediately succeeded the accident, whether the indirect debility, the consequence of intoxication; or that greater degree of the same affection produced by concussion; or mechanical injury, it disappeared for a time, for he had been free from headache for some time previous to admission, and had even attempted to return to his work. It is probable that the immediate effects of the injury were quickly succeeded by active inflammation of the hemisphere, which had terminated in suppuration before the remission of the headache, for the dry pus found in the preternatural cavity in its substance, was evidently not of recent formation; and after his admission into the hospital, there were no symptoms of inflammation to be observed.

The gradual increase of the blindness may be accounted for on the supposition of increasing pressure from the effusion of fluid, but its sudden commencement immediately after the injury suggests the possibility of some rupture or effusion at the time.

Notwithstanding the considerable quantity of fluid found in the right ventricle, and the total disorganization of the left hemisphere, there were no symptoms of compression except the blindness, and none of inflammation except the pain and some thirst. The only affection of his mental faculties was partial loss of memory and increased irritability of temper, while his functions were scarcely at all affected. He had no muscular paralysis. He slept well for a person in such agony of pain. He had a very good appetite, and digested well. His bowels were not immoderately costive. Urine natural. Pulse and respiration perfectly natural, and yet this nearly healthy state of his organic and animal life was found to co-exist with the manifest disorganization of almost all the medullary substance of the left hemisphere of the brain.

Is the medullary matter of less importance to the due performance of the functions of the brain, than the cortical? Supposing the brain to be a double organ, why are its functions unimpaired when one organ is affected? Is the affected side cut off from all communication with the *sensorium commune?* Why in this case was no difference to be perceived in the muscular powers of the two sides of the body?

Case II.—*Disorganization of a large portion of one Hemisphere of the Brain, producing first Mental Derangement and then Hemiplegia.*

J. J. aged 50, Chelsea pensioner, March 21st, was admitted into the Infirmary in a state of high delirium, using violent muscular action, and throwing himself into various postures. He appeared at first sight to be in a state of great intoxication, or to be a raving maniac; when placed upon his bed he immediately rolled off, and the assistance of several men was necessary to replace him. The application of the strait-waistcoat became indispensable. Upon being questioned as to his complaints, he referred them generally to his head, which he said ached intolerably, and he applied one hand to the occiput where the seat of the pain seemed to be.

His tongue was white and dry, and he complained much of thirst, to quench which he drank immoderately. The pulse was 104, firm and strong. The heat 98. Surface warm and very dry. The bowels were reported to be regular, and urine free and copious. His countenance was rather anxious, but not maniacal or wild, nor had he any expression in it indicating pain of body or mind. As to the cause of his complaints nothing could be learnt from himself, for though he was particularly loquacious, his ideas were confused. He had no precise knowledge as to the time of his admission, and he talked incoherently upon several subjects. When more composed, which he became soon after the application of the strait-waistcoat, he said, that six weeks before he had been ill of fever: From his friends, however, it appeared that he had been ill for a few days only, and that the day upon which he was sent in, he fell down suddenly in a fit, and soon became maniacal.

Eighteen ounces of blood were taken from his arm; the blood coagulated rapidly, almost when flowing; there was no buffy coat formed upon it, and the separation of serum was small. An anodyne draught, with sixty drops of laudanum, was ordered at bed-time, and a purging bolus was taken early in the morning. Low diet.

22d.—He ceased to talk early in the evening. At midnight he fell asleep, and slept soundly till eleven in the morning.

When awoke he still complained of his head aching, and talked sometimes incoherently, but was perfectly distinct in his articulation. Every thing that was said to him he immediately repeated in a quick and hasty manner. When informed that he had been riotous the day before, he immediately denied it, and seemed hurt that he was unjustly accused, expressing a desire to behave well, and a willingness to submit to any discipline that might be imposed upon him

The bolus had not opened his bowels; and he had not allowed an injection which was ordered to be administered.

The head was now shaved, and twelve leeches applied to the temples, which bled well; but he was riotous during the rest of the day.

An enema was given in the evening, and an anodyne draught at bed-time.

23d.—He slept ill, and fell out of bed several times. When awoke he talked incessantly, but answered coherently every question put to him. Said this morning that his head was relieved, and complained of some pain in his bones; he now lay upon his left side, with his face close to the wall, and drew his knees up to his body, keeping his head under the bed-clothes.

The injection, which was given, came away with but little feculent matter. He complained much of thirst, and drank immoderately; his appetite was bad.

He got frequent doses of antimonial powder, and the anodyne draught was repeated.

24th.—Did not sleep till four o'clock in the morning; he was quiet during the night, and lay in the posture before described. He seemed much disposed to talk if spoken to, but ceased to talk to himself. Pulse 108, but not strong; he complained less of his head, and did not as formerly place his hand upon his occiput. The bowels still remained torpid. He made many complaints as of pains in his bones. Boluses of jalap and calomel were ordered.

25th.—The medicine operated well, and several liquid passages were procured. He was quiet during the night, but did not sleep. The pulse was 118, and firm, but intermitted a little. He now complained of pain in his arm. There appeared at this time some desire to deceive, and to exaggerate his complaints. He said he could not raise his arm to his head, but he seemed to make violent exertions to resist when any person attempted to lift it up. His account of his complaints was not very accurate; and when he was told that his arm was not stiff unless he made it so, he immediately complained of his feet.

Twelve ounces of blood were ordered to be taken from his arm.

26th.—He was averse to being again bled, and six ounces only were procured. At this time he was apparently sound in mind and body, for though he talked much, and sometimes a little incoherently, yet he was perfectly conscious of every thing he did, and of every thing that was said to him. He talked rationally and sensibly upon many subjects, could give a very good history of himself, and even moralize upon his former unruly conduct.

This evening he again became riotous and restless, and continued so till two in the morning, when he ceased to speak, but moaned for a considerable time after. He has not spoken since intelligibly, though perfectly conscious of all that is done.

The palpebra of the left eye was drawn down, as was the angle of the mouth on the same side. The left arm was warmer to the touch than the right, and the pulse much more distinct. The muscles of the left leg were very rigid, but the fore arm almost paralytic. He now again placed his right hand upon his occiput, where he seemed to feel pain. The tongue was drawn to the left side, but he could not protrude it beyond his teeth. He passed three or four stools during the night in bed, and involuntarily.

27th.—An injection operated well, and he passed several stools since. The pulse could hardly be felt in either arm, but in the carotid it was 108, and intermitted. A large blister to the head rose well. He has not yet spoken, and draws himself down to the left side of the bed. The left arm is quite paralytic. He is insensible to external objects, and the pupils of his eyes are contracted. The face is somewhat distorted, pale, and and void of animation. The pulse in the left wrist continued of moderate strength. A little wine was allowed.

28th.—Unable to speak. Moans much, and throws about his right arm. Attempts to protrude his tongue. The whole muscles of the left side seem to be paralytic, but still very rigid, requiring some force to bend the joints, which remain in any posture in which they are placed. The pupils of both eyes contracted. Takes a little wine. Pulse about 120, firm, but intermitting in the carotid, and is not felt in the wrist. Extremities generally cold. Face much collapsed.

29th.—Slight redness produced by aq. amm. applied to his head. Got an anodyne injection last night, which was retained. Slumbered all night; seems still sensible, and attempts to protrude his tongue when desired. Surface warmer since injection; mouth discharges a yellowish matter. His back is threatened with mortification.

30th.—Sinapisms, though often renewed, did not affect his head. After injections much foul feculent matter came away. In the evening seemed more sensible, and protruded his tongue better. Countenance improved.

31st.—Lay all night in a state of stupor, with no motion. Respiration natural. Attempted to protrude his tongue when desired. Took yesterday eight ounces of wine. An emollient injection brought off much feculent matter, and he retained a nutritive injection. Sacrum and several parts of right side livid and sphacelated.

April 1st.—Continued in the same torpid state till 5, P. M., and then died without a struggle.

Sectio Cadaveris.—The membranes of the brain were generally healthy, but a portion of the arachnoid on the right side was a little thickened.

The whole of the right hemisphere was softer than the left, but the anterior and middle lobes were in a morbid and pulpy state.

In the right ventricle there was no water; but the surface of the thalamus nervi optici was covered by a soft pulpy mass, easily removed.

The left ventricle contained some fluid, and the choroid plexus very much distended. Some vessels were also seen ramified upon the parietes of the ventricle, very much injected with blood.

At the basis of the brain there was a considerable effusion of fluid.

The other viscera were not examined.

This forms a striking contrast to the preceding case, especially in the remarkable affection of the mental faculties, and the subsequent paralysis. When admitted he had much the appearance of a maniac; and when his violence subsided, his manner was altogether such as excited a strong suspicion of his feigning many of his symptoms. On the 23d his singular mode of lying in bed showed that the muscular power of the left side was in a great measure lost; and on the evening of the 28th the paralysis of that side became more decided, after an accession of mental excitement. The joints of the affected side were not, as usual, supple and relaxed, but remarkably rigid, as if the flexor muscles were incapable of extension, corresponding to their state in catalepsy. Here, as is commonly the case, the disease existed in the opposite side of the brain from that affected with paralysis.

The disease evidently consisted in an acute inflammation of the substance of the brain terminating in disorganization. The exciting cause was not ascertained; but it appeared that he had immediately before walked from Dundee to receive his pension at Edinburgh.

CASE III.—*Disorganization of the Cerebellum producing Paraplegia.* Communicated to Dr DUNCAN, jun. by PATRICK MURPHY, M. D.

Jan. 1st.—D. H. æt. 29, bookbinder, (a patient at the Royal Dispensary.) About three weeks ago began to be affected with numbness of the lower extremities, succeeded by partial loss of sensation, and of motion, (greatest in the right side,) commencing at his feet, and gradually extending upwards towards the trunk, the lower part of which is now become affected. The debility of the lower extremities is at present so great that he is unable to support himself, and he fell several times to-day when returning from his work-shop. There is scarcely any œdema to be observed. He is sensible to the natural calls for the alvine evacuation, but, since the numbness extended to his trunk, has lost the power of retension. There is no incontinence of urine, but a greater exertion than usual is required for its expulsion.

There is no pain of head, giddiness, or affection of sight or hearing; but his countenance has an expression of absence and stupidity; and, although his answers are perfectly rational and explicit, he seems unwilling to be troubled with questions, and answers them in the fewest terms, and, as it were, with an effort like a person spoken to when half asleep. He has a considerable disposition to *drowsiness*, to which he has been observed to betray a greater tendency than usual for these three months past, so much so, that when he came home to his meals, he consumed every leisure moment in dozing in bed.

There is no pain nor swelling in the course of the spinal column; and he is not aware that he ever received an injury on that part.

Complains of severe pain of breast, preventing a full inspiration.

Pulse 100, full and strong; tongue foul; appetite good.

Jan. 13th.—The paralysis has gradually extended over the trunk, and to the upper extremities, which are become nearly powerless. The right arm is most affected. He has lost all power of motion of the lower extremities, and all sense of feeling, unless to a very slight degree in the upper part of the trunk, and in the head. He has had for these few days some pain about the right side of the inferior maxilla, extending a little way up the cheek. The paralysis in the other parts of the body was preceded by diffused fugitive pains situated in these parts. Feces passed involuntarily and unconsciously. Urine dribbled from the bladder, which is much distended. There is considerable difficulty in inspiration, unattended with pain, and seeming to arise from paralysis of the muscles. He still retains the power of speech; his intellect is unimpaired, and he expresses himself sensible of the approach of death.

14th.—He died this morning.

The treatment consisted in the exhibition of laxatives, a bleeding from the arm, a sinapism applied about two days ago to the spine, and a blister last night (13th) to the nape of the neck; to the two latter he was altogether insensible. About two quarts of urine were drawn off by the catheter last night.

Dissection, Jan. 15th.—The veins of the dura mater appeared rather more distended with blood than natural. The medullary matter, exposed by making a horizontal section of the brain, presented a whiter and more blanched appearance than any of the gentlemen * present remembered to have witnessed before. The cerebrum was also much softer than usual. The pia mater covering the *cerebellum* was very much thickened, and converted into a yellowish gelatinous-like mass. The *cerebellum* itself was *softened to a remarkable degree, being in a state nearly approaching to suppuration.*

---

* Dr Duncan, jun. Mr Lizars, Dr Moore, Mr Orr, Mr Gaulter, and Mr Lane.

The abdominal viscera were perfectly healthy, with the exception of slight traces of inflammation in a small portion of the intestines.

The spinal marrow was not examined.

The deceased had never at any period been subject to headache, on which account his father, who stood by at the dissection, with difficulty permitted the head to be examined. He was reported to have been a young man of sober regular habits.

CASE IV.—*Abscess in the Cerebellum, with Chronic purulent discharge from the Ear.*

D. S. ætat. 19, a smith, was admitted on the 31st August 1820 into Queensberry-House.

His complaints were intense headache, tenderness of abdomen, and great prostration of strength, pulse 60. These were treated with blisters and purgatives, but suffered no abatement, and terminated fatally on the morning of the 5th of September.

Dissection.—A considerable portion of the small intestines were found to be inflamed, which accounted for the pain refered to that region. Nothing else worthy of notice presented itself in the abdominal or thoracic cavities.

On opening the head the cerebrum was observed to be sound; in each of the lateral ventricles there was about a tea-spoonful of fluid.

Nearly all the right lobe of the cerebellum was occupied by an abscess containing about ʒij. of thick pus.

When the temporal bone was examined no traces were found either of the membranes or bones of the tympanum. The cavity of the tympanum was found filled with pus, and a bunch of little red bags containing fluid, and adhering by a stalk to the side. There was a cylindrical absorption of bone in the petrous portion of the temporal bone, which was softer than usual, extending from the transverse sinus across to near the cochlea.

History, as given by his sister after the dissection. Two years ago his right ear was pulled for him. Ever since he has had severe headache and deafness of that side. Occasionally there was a thick yellow discharge from that ear, and then he enjoyed better health; latterly his judgment became impaired.

CASE V.—*Suppuration of the right anterior Lobe of the Brain, with chronic habitual discharge from the Ear, terminating in a tetanic affection.*

J. A. ætat. 21, shoemaker, admitted into Queensberry Fever Hospital 14th November 1820. When between six and seven years of age his right ear began to discharge thick yellow pus, in consequence, it was thought, of cold. The affected ear, viz. the right, has continued to run ever since, with occasional intermissions of weeks or months. His health has been generally good, and not affected by the state of the discharge, which sometimes changed from thick and yellow to a thin and watery fluid; occasionally a little blood was observed to flow. Five weeks ago he complained of violent shooting pains in the affected ear; this led to the use of poultices and tepid injections. The pain soon remitted, but the jaw of that side quickly became affected, as his friends thought, with rheumatism. When the pain of his ear remitted some blood flowed, and the purulent discharge became much increased in quantity. His complaints for nearly three weeks continued to be the fixed pain of the jaw, together with great constipation of his bowels, having had but one stool in twelve days, notwithstanding purgatives.

About ten days ago, after being exposed to cold, he suddenly complained of intense headache; his head was bent forwards upon his knees; he lost his voice; in about seven hours the pain went off, and his voice returned. After this he complained of oppression only, *but, as his father expressed it,* was not himself again.

Two days after this last attack he was brought into Queensberry-House. His complaints were obstinate constipation, slight headache, pain of back and body, stiffness and slight curvature of neck backwards, also delirium of a mild kind. Purgatives, venesection, and antispasmodics were freely used; frictions and stimulants were applied to the spine, but all in vain. Bowels were freely opened, but his other complaints increased. His neck was obstinately drawn back; his delirium became violent, singing almost incessantly, and upon the fifth day from admission he died.

Dissection.—In the thorax and abdominal cavities were found lb. iv. of bloody extravasated fluid, with effusion of serum below the peritoneal coat of the bladder. The first turn of the duodenum contained about lbss. of dark coloured fluid. At this part, both externally and internally the coats of the intestines were thick and black. The pericardium contained about

℥ij. of serum. The posterior mediastinum was much infarcted with black blood.

The spinal marrow from the medulla oblongata to the second or third dorsal vertebræ was softer than usual. The meningeal linings from this place downwards were much distended, and on slitting them freely open ℥ij. of pus gushed out. This had dissected and separated to some distance the fibres of the cauda equina.

The base of the brain presented an astonishing appearance of disease. All the nerves at their origin were encircled with pus; a part of the right anterior lobe was discoloured, opposite to the dura mater, which was absorbed; a large abscess was found in this lobe, containing thin pus, and portions of cortical substance; the lateral, third and fourth ventricles all contained pus. The petrous portion of the temporal bone was filled with pus.

Case VI.—*Extensive Suppuration of the Cavities of the Petrous Portion of the Temporal Bone, with Chronic Discharge from the Ear.*

J. M. ætat. 45, married, by trade a mason, of a robust and, to appearance, healthy habit, though at present suffering from ill health.

Nov. 11th.—Twenty years ago his left ear, owing to cold, as he thinks, began to discharge matter, and has continued to do so, more or less, ever since. He has been very susceptible of cold, and always suffered from it in his ear. On those occasions, after violent pain, thick matter was discharged. When most healthy, the fluid discharged was watery; sometimes it was bloody.

Five weeks ago he crossed from Leith to Kinghorn in an open boat. As he sat on the high side his left ear was exposed to the wind and spray, the day being tempestuous. No bad effect was perceived from this exposure, until two nights after, when severe shooting pains were felt all through the left side of his head. In the morning these went off; next night they returned, and again left him; and this course they continued to follow for rather more than four weeks, regularly making their attack at 12 o'clock, P. M. and retiring at the approach of light. During the day he was pretty well.

About a week ago the shooting pains left him, but were succeeded by a fixed constant severe pain, extending from near the foramen magnum to the extremity of the sagittal suture. This day the pain has shifted more into the affected side, and left the mesial plane. During the first stage of this attack, viz. that attended with shooting pains, the discharge from the ear was increased, but continued thin and watery; however, upon the pain becoming stationary, some blood came away, and then a very copious flow of thick pus. The same fluid came also from the nose in considerable quantity. The integuments and glands in the vicinity of the ear are swelled and inflamed. Pulse 92; tongue clean; bowels regular. No sleep for the last five weeks. He has not heard by the left ear since he became affected.

22d.—On the 12th the pain began to abate; some sleep was obtained; the discharge diminished; and he walked about in tolerable health. Four days ago he was suddenly seized with violent pain over his eyes, which has continued ever since, confining him to bed, and totally depriving him of sleep. The purulent discharge increased with the pain, and was sometimes coloured with blood. He was bled yesterday to ℥xvi. Blood much buffed; pulse 104; bowels regular.

30th.—For some days before death he ceased to complain of headache, and referred all the pain he suffered to the neck on the affected side. The integuments were red and tense, and a dull sense of fluctuation indicated the propriety of an opening, which was made a little below the insertion of the sterno-mastoid muscle. Blood, pus, and air issued out in abundance. Considerable improvement, both in external appearance and internal comfort, followed, but soon gave place to low delirium and death.

Dissection.—Brain. There was a slight appearance of effusion below the arachnoid coat. Many parts of the brain, particularly on the left side, were of a livid aspect. On the same side it was throughout softer than usual, and when cut into, displayed the same dark hue. It was observed to smell strongly of pus. What has now been said applies equally to the cerebrum and cerebellum.

The cavernous sinuses were filled with matter of a grey colour. The body of the sphenoid bone, particularly on the left side, was carious; through it a probe could be passed downwards out of the cranium, and backwards into the petrous bone. All the part of the temporal bone under the insertion of the sterno-mastoid was carious; through it a probe could be passed quite across the petrous portion, which was filled with pus. The carotid canal and posterior lacerated holes were engaged in this part of the disease. The carotid artery was externally coated with pus, and the cuneiform process of the os occipitis was carious. Indeed, it may be stated generally, that all the base of the cranium answering to the left and middle lobe of cerebrum was so.

An extensive collection of pus was found under and in the substance of the sterno-mastoid muscle. It had dissected the cervical muscles, and descended far down the back beneath the trapezius muscle.

For the histories of the three preceding cases and dissections, I am indebted to Mr Syme, at that time senior clerk in Queensberry fever hospital, where the two first were patients under my care. The third case was a private patient in the neighbourhood. The dissections were all performed by Mr Syme in my presence, and Mr Liston assisted at the last.

The coincidence, at one time, of so many instances of Otirrhœa purulenta; for besides these three fatal cases, I had a female patient in the clinical ward of the Royal Infirmary who was dismissed relieved, is worthy of notice. But the fact is, that the disease is much more frequent and more serious than is commonly believed.

My attention was directed, many years ago, to the importance of habitual purulent discharge from the ear, especially when it alternates with intense headache or stupor, by being present at the dissection, by my friend Mr Wishart, of an old woman, who died with symptoms of oppression and affection of the brain. At our first examination of the brain, conducted in the common way by opening the lateral ventricles, and tracing the parts anatomically, the disease escaped detection, and the first morbid appearance which we discovered was a minute caries of the temporal bone, through which a probe easily passed out by the external meatus. On examining the basis of the brain, there was discovered, on the surface of the middle lobe, and corresponding with the caries, a small hole plugged up with some purulent matter, which communicated with a cavity, in the substance of the brain, of considerable size, but with collapsed sides, and containing little pus, which was the reason of its escaping detection. Upon inquiry, we learned, that this woman had been many years deaf in the ear of that side, in consequence of its having suppurated from cold when a young woman, and that she had ever since been affected with a discharge from that ear, unless when, from taking cold, it was suppressed; and she then suffered extremely until the discharge was renewed. This woman's son had also habitual discharge from one ear, with deafness of that side. Her case is another example of that variety to which No. IV. of the present series belongs.

Another form of the disease resembling No. VI. soon after occurred to me; but as I did not see the patient during life I did not preserve notes at the time; and my recollection of it is not minute as to circumstances. The man was supposed to have died of pneumonia, and there was actually great inflammation of the pleura found on dissection; but he had also deafness and purulent discharge from the ear, and we found purulent matter under the aponeurosis, and between the muscles behind and below the ear. The cells of the mastoid process were filled with matter, and the dura mater corresponding to the pars petrosa of the temporal bone was inflamed and covered with pus.

I have since met with several cases of otirrhea or purulent discharge from the ear, with deafness and occasional intolerable headach or stupor, in which, although the patients survived, there could be little doubt of the deep-seated nature of the disease, especially when we compare the symptoms with those of the cases in which examination after death afforded an opportunity of ascertaining the real nature of the disease.

Although perhaps not sufficiently attended to in general, cases of otirrhoea connected with destructive affection of the internal ear or brain, have been described by authors. *

From the consideration of the cases I have examined and read, it appears to me that chronic suppuration of the ear arises from many different causes. 1st, From external injury, as bruises and fracture; 2dly, from cold; 3dly, as a sequæla of fever and febrile diseases.

It may either originate in some part of the ear itself, as the membrane lining the meatus, or in the Eustachian tube, in which case the danger arises from the bone becoming carious, the cells getting filled with pus, the internal table of the temporal bone becoming carious and eroded, and the inflammation being communicated to the membranes of the brain, or to the brain itself. This mode of the disease is most probably that which occurs when it proceeds from external injury or cold, and when it commences with acute otitis. It may also commence in the brain itself, in which case the progress of the symptoms will be different, more resembling those which arise from concussion, and in this case the otitis or affection of the ear is only secondary, in consequence either of the matter working its way outwardly through the temporal bone into the ear, and then assuming a chronic form; or of the inflammation of the dura mater being communicated by sympathy to the internal membrane of the ear, without any direct communication.

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* Besides the excellent papers of Dr Abercrombie, inserted in the 14th and 15th volumes of this Journal, I may here refer to a very interesting and detailed Essay by Rostan, entitled, "Sur une Maladie peu connue qui a reçu le nom de Ramollissement du Cerveau," inserted in the Nouveau Journal de Medecine for September, October, and November, 1820.

II.

An Account of certain Diseases, lately prevailing in Alford, Aberdeenshire By ALEXANDER MURRAY, Surgeon.

SIR,—IF you consider the following description of certain diseases which lately prevailed in this place, to contain any thing worthy of notice in your excellent Journal, I presume to request its insertion. The diseases which I mean to notice, are in themselves sufficiently important, and to some of them particular attention has of late been paid; hence a description of such diseases, as occurring in this, or any other situation, may not be devoid of interest.

Alford is a valley in Aberdeenshire, nearly circular in form, and almost completely surrounded by hills,—its circumference being about 20 miles. It lies in a direction west, and a little north from Aberdeen, more than 20 miles from that city, and at a greater distance from any other maritime point. This valley, through which flows the Don, a river of considerable size, consists of land mostly in a state of cultivation; it contains little moss, but a good deal of heath, and many small eminences, now covered with young wood in a thriving condition. In winter the cold is severe, the thermometer of Fahrenheit being occasionally so low as 8, and even in summer, frosts of very short duration are not uncommon. In this tract of country, which is entirely an agricultural district, there is at present comparatively little poverty, probably no where such as to occasion very distressing privations. The general habits of the inhabitants are such as is common throughout Scotland.

During the greater part of two years I have had an opportunity of observing the diseases of this place. The following description of some of the diseases which occurred in the above period, is brief and incomplete, but I believe not inaccurate.

Typhus fever appeared here in the end of June 1819. The person first affected was a woman, who came ill of the disease from a place at some distance where contagious fever prevailed; and I saw no other until the beginning of September, when two persons living in the house with the first patient took the disease. Before the end of November, twelve cases had occurred, all unquestionably derived from the person who first had the disease. From November no new case was seen until February 1820. From this period the disease continued to autumn.

In August of that year, I visited ten cases, the greatest number which I saw in one month; and since that time no instance of typhus has taken place. More than fifty cases occurred in the above time.

The symptoms of this fever were far from violent, nor were they in any respect very remarkable. In most the disease commenced in a gradual manner, and in several, there was neither frequency of pulse, nor heat of skin, during the attack. Perhaps of all the symptoms, an extreme aversion to motion and a feeling of sinking were those most universally present. The pulse varied from natural frequency to 150; in one instance it kept for twelve weeks at 120. Delirium was very rare, but slight stupor, deafness, and inattention to surrounding objects, were not uncommon. The bowels were in general confined, but sickness was seldom urgent. The tongue was often slimy, but never dry. In one case, where death occurred after twelve weeks illness, the tongue was, throughout, clean and moist. In cold weather, a teazing cough was always present, sometimes accompanied by pain of breast;—excepting this last, and headache, there was no severe local affection. The duration of the disease was from one to twelve weeks and upwards; but no marked crisis was observed, for the recovery in general advanced by imperceptible degrees. In one patient only was there any injury of parts from pressure. Of the number affected, two died, both adult females; one after ten weeks, and the other after more than twelve weeks illness. The number of males and females attacked was nearly equal. None above forty, nor under three were affected; except in one family, where six were at the same time confined to bed; of this number, were a man aged sixty, and a child three years old. I saw only one case of relapse, and in no instance was any one twice affected. Indeed, from some examples of remarkable exposure, I should think the susceptibility much diminished by an attack.

Bloodletting was practised in about twenty cases, and in no instance was its adoption regretted. In several of this number, it was resorted to mainly with the view of relieving local affection, as pain of the chest, and on this account it has several times been practised late in the disease, in one on the 18th day, and in others on the 10th, 9th, &c. In these instances, the quantity drawn never exceeded eight ounces; and although it relieved the symptoms against which it was used, it produced, at this period, no general improvement of the disease, nor the contrary. In the greater number, however, the period of the disease was earlier, and in these many symptoms, as headache, pain of back, and incipient delirium, were much relieved. The pulse has many times become slower and fuller after bleeding, and the patient has expressed immediate abatement of oppression and pain; but in no case have I known the disease suddenly cut short by this or any other means. The general amount of the bleeding was twelve ounces. The largest quantity taken was fifty-eight ounces, abstracted at four different times. In this case, the headache and pain of back were very intense, and the buff on the blood first drawn was I think thicker than I ever observed; and as inducement to the successive bleedings in this attack, I had, besides other reasons, the earnest request of the patient, founded upon his previous experience of its effects. Ablution with cold water was advantageously practised; but the temperature was seldom so high as to admit of that marked benefit, which sometimes results from this application. Purgatives were assiduously used throughout the disease. In a few instances, salivation was attempted, by giving each day, for some time, about twelve grains of calomel, combined with opium, but in no instance have I effected my purpose. It would seem that in typhus, something prevents this effect, for, by a similar mode, I have, in the sequel of acute inflammations, readily excited salivation. Diaphoretics were scarcely used. Antimonial powder was given in a few cases, but, instead of perspiration, it was found to excite an intolerable dry heat of skin. A combination of this powder with opium and calomel was sometimes given at night, and these produced an easy composedness, if not sleep, along with an agreeable softness of skin. Stimulants were sometimes tried in the latter stages of protracted cases. Wine generally excited disagreeable heat, and even slight delirium. From bark I noticed no effect, unless that of exciting or aggravating cough. Camphor preparations were in a few instances exhibited, and they seemed to refresh and remove the sensation of sinking. Opiates were given to a considerable extent, and in no point of view seemed deleterious; often, for a number of nights in succession, opiates were given with much relief to cough, in many cases a most distressing symptom. Blisters also relieved this cough, but their effect was not more permanent than that of the preparations of opium, while these could be more frequently repeated. Nothing seemed more necessary than to keep the patient strictly to bed from the first moment of attack; for the endeavour to resist being confined proved very injurious. Indeed, I suspect the event of the two fatal cases to have been occasioned by imprudence of this sort.

In October 1819, *measles* appeared, and prevailed extensively for several weeks, but in no instance, within my knowledge, was death occasioned by this disease. Blisters put on the chest were found in several instances to remove the most laborious, even spasmodic breathing. Even in the youngest children they were used without any bad effect, but then they were applied only a very few hours; a precaution necessary to be kept in view as one infant sunk under a blister, kept on longer than was directed. A bad pulmonic affection occurred, under the following circumstances. The father of a family had scarlet fever, and found relief from the ablution. In a few days, his son, a boy of nine, living in the same house, became feverish, to which state a redness of skin succeeded. The complaint was decided rubeola, but on the supposition of its being the same as his father's, the friends used washing with cold water. Soon after, an affection of the chest, the most severe I think which I saw during measles, came on.

Small-pox appeared about the time that measles began to subside, viz. in the beginning of December 1819. Nearly thirty cases of the disease occurred, within my knowledge. Of this number four died. The two first who had the disease were brothers, and both died, one on 17th, and the other on 15th day of his illness. They had been vaccinated by a medical practitioner twelve years before, a circumstance which excited here much doubt of the prophylactic power of cow-pox; a doubt which the subsequent occurrence of a modified small-pox in the vaccinated has nearly removed. In the first of the young men now referred to, the disease was so far advanced before I saw him, that a cow-pock mark, if any existed, must have been obscured by the variolous eruption. In the other, however, I certainly did see a mark similar to what follows genuine cow-pox, viz. a round pitted cicatrix of the ordinary size. The friends informed me, that when vaccinated, each had pocks like others whom they saw, and that no matter was taken off their arms. In another case of undoubted small-pox in a young man, vaccinated also twelve years before, I saw on his arm a mark, which still exists. This is circular and deeply indented, but it wants the small granular impressions, reckoned desirable after the cow-pock vesicle. A young lady likewise took small-pox, on whose arm two marks were seen, but these were merely dotting of the skin, without definite margin or distinctly marked scar. These marks are still more obscure since the small-pox took place.

Since July 1819, this place has been twice visited by a pock different from the eruption of variola. This was, in both instances a slight affection, so that, in general I saw it only by chance, or heard of it after its disappearance. I am sorry that, for this reason, I am unable to describe it so minutely, as, from the importance of late attached to this subject, might be desirable.

In July and August 1819, the following disease appeared in many children, both vaccinated and unvaccinated.—A febrile state, lasting about two days, ushered in an eruption, which began with red spots. The centre of each spot speedily became elevated, and on this rising, a clear speck was soon discernible, which afterwards assumed the vesicular appearance. The perfect appearance thus was vesicles, each having redness around its base. This eruption began on the forehead and back, and appeared in successive crops, but by the fourth day it was nearly all quite faded. In one instance slight marks were left, which still exist. I have since vaccinated six, all of whom I saw ill of this disease; of this number, four who had not previously had cow-pox, took the disease, (*i. e.* cow-pox,) while those who had formerly been vaccinated, were not affected by this second operation. During the occurrence of the above disease, I have every reason to know, that not a single case of small-pox existed in this country.

Again, during the prevalence of small-pox, in the end of the same year, a disease, undoubtedly the modified small-pox, appeared. This occurred in those only who had been previously vaccinated, and generally existed where common variola was in the house or neighbourhood. It affected both adults and children. In most respects this resembled the disease last described, but in the affection now noticed, I thought the vesicular membrane more pellucid, and the contents more turbid, than in the epidemic of July. In that accompanying small-pox, also, I observed a clear speck in the middle of several of the vesicles, which I did not, at least, observe in the other. In one case, the pain of back and head, with sickness, ushering in the above eruption, was extremely severe. Imagining the attack likely to prove typhus, I bled to the amount of twelve ounces, with instant and complete relief to the symptoms.

From observations made in this place, I should infer, that little can certainly be deduced, regarding the probable security of the individual from the appearance of a cow pock mark, and that the common attention to the progress of the vaccine vesicle, though sufficiently laudable, is perhaps of less importance than is supposed. It is now only seven years since a medical practitioner first resided in this vale. For many years before, however, many of the inhabitants were vaccinated by surgeons at a distance, who most probably, in no one instance, saw the person after the operation. Farther, it was I believe, very general here, for the common people themselves to perform vaccination, with needles, &c. and to allow matter to be taken off their children, by as many as chose. Many such marks as an irregular scar, without central pits, resembling in superficial aspect the mark of a burn, are here to be seen. Notwithstanding all these circumstances, no instance of small-pox after vaccination, unless those I mentioned, occurred. I have vaccinated a few who had marks of previous vaccination, which might have been accounted good, in whom this second operation produced pocks of perfect appearance and progress; while on the other hand, repeated vaccination of those who had imperfect marks, has produced no satisfactory appearance. If there is only one cutaneous affection, which is genuine cow-pox, of unvarying appearance, progress, and effect, in leaving one particular mark, the circumstance is an anomaly in the history of diseases of the skin.

In one instance here, vaccination proved a security from small-pox, under circumstances where its benefit could not have been sanguinely anticipated. In a family of six children, one took small-pox. After the eruption had fully appeared, the others were vaccinated; the operation took effect in all; and, though living mostly in the same apartment with their sister, ill of the disease, not one was infected.

Another epidemic, of more extensive prevalence than any of the others, succeeded the contagious fever. About the middle of last summer *scarlet-fever* showed itself here, and from that time until February last, it never disappeared. I can now bring to remembrance 160 cases, of which I saw the greater part; and, I doubt not, that, in the period mentioned, more than 200 were seized with this disease, in the tract of country to which these observations refer. In these 160 cases, the number of adults and children affected was nearly equal. All ages, both of males and females, underwent the disease; 90 were females, and 70 males; 16 died, viz. 14 females and 2 males, 6 being adult, and 10 under 13 years of age; of these 6 adults, 3 were women immediately after delivery.

The disease, as it here appeared, might, in adults, be referred to four principal modes of appearance, of which the two first and two last respectively might be considered as varieties of the same species; and although there were cases bearing an intermediate character, these forms were in general sufficiently marked.

In the first form, the attack commenced with the simultaneous occurrence of chilliness, pain in throat, feebleness, weariness, and slimy tongue. To these, in the course of twenty-four hours, frequency of pulse and thirst, with redness of skin and heat, supervened, although the two last mentioned symptoms were not universally present. The disease, of this appearance, ran its course, according to the slightest form of scarlatina, as generally described.

In the second variety, the pain and swelling of throat were greater, and the pulse fuller, stronger, and generally slower than in the other. The tongue soon became very dry and hard, and the secretion of mucus in the mouth and throat considerable. The bowels had a tendency to constipation, and headache was, from the first, much complained of. The other symptoms were, in common, similar to those of the first variety, and in general they subsided in the same manner as in the other. In severe attacks, however, of this kind, a hurry of ideas and of speech, with some alteration in the tone of voice, existed from the beginning. The patient soon became slightly delirious, on the approach of night. The tongue became drier and assumed a blackish hue; sordes collected upon the teeth; while the pulse lost its strength and became very frequent. In only one case of this form did a fatal termination take place, and in this instance the bowels were remarkably neglected for many days. In this patient, after the symptoms mentioned, the eyes became red, the delirium verged to stupor, and picking of the bed-clothes, with much *subsultus tendinum*, was the precursor of death.

In the third variety, (or first variety of second species of attack,) the symptoms of oppression existed in a high degree. The patient was seized with chilliness, sometimes amounting to rigor, great feebleness and sickness, rarely inducing vomiting. The succeeding eruption was never complete, but appeared faint, or in the form of spots. The pulse after a day or two often intermitted remarkably, but was full. The pain of throat was trifling, but mucus collected here and in the mouth in great quantity, and was very troublesome. After a few days the tongue became dry, and sometimes sordes collected on the teeth, while not unfrequently a diarrhœa also took place, and seemed injurious. In no instance of this form, did death ensue. The pulse lost its intermission; the diarrhœa abated; the mouth regained its moistness, and the eruption was more fully evolved. Upon the occurrence of these symptoms, recovery went gradually forward. It was always long before perfect restoration to health took place; and very often after convalescence was begun, a painful affection of the joints, especially in the wrists and fingers, gave rise to a renewal of fever, and retarded recovery. Severe attacks of sickness, sometimes amounting in appearance to a faint, were common in the latter part of this form.

In the fourth or last variety, the patient was always found in an uncomplaining state, affected with extreme prostration of strength, aversion to motion, and indifference to surrounding objects. The countenance assumed a waxen hue, and was strongly expressive of vacuity and insensibility. The pulse was feeble and rapid, sometimes 145. The tongue was always moist, and the mouth filled with viscid mucus, which formed into a ropy appearance, on the mouth being opened. Sometimes vesications, rarely blackish, were seen on the velum pendulum palati. Eruption was generally absent, but in one case it appeared of livid hue; and in one or two, a faint efflorescence spread over the breast and forehead, and in these cases the face was swelled. After a day or two the pulse became remarkably intermittent, or altogether imperceptible; the extremities cold; diarrhœa made its appearance; the respiration became laborious, and death ensued before the conclusion of the fourth day. Ferrety eyes and much jactitation in one case preceded death. All the adults who died, with one exception, had this form, and from no fully marked attack did recovery take place. Of six who died of this form, two were women, a day or two after delivery, and other three women with infants at the breast.

In infants and children, the varieties of appearance which I have attempted to describe were not to be perceived. In these, the attack commenced with paleness of face and aversion to food and exercise. In most an eruption appeared at the usual time; the heat of skin was increased, and the thirst great, while the saliva flowed often profusely from the mouth. A degree of drowsiness soon took place, and where recovery followed, it was generally accompanied by a gradual resolution of the eruption and the coma. In a few of the fatal cases, in infants, death took place after an increase of the drowsiness, with convulsions, and an abundant discharge from the bowels of dark green fetid matter. In most death did not take place until many days had elapsed; sometimes not sooner than the third week. In these protracted cases, the body was much emaciated, and the skin of the face peculiarly shrivelled; and then the immediate cause of death seemed, in more than one, to be an exacerbation which arose from the glands of the neck swelling.

To speak, in a general way, of these different attacks of scarlet-fever, in adults and children, I would make the following observations: The accessions of this disease differed remarkably in their mode from the slow, insidious manner in which typhus approached. The degree of severity was marked from the first, and within a few hours from the person being seized, the violence, and event of the subsequent disease could, with tolerable certainty, be predicted. The eruption was, in general, uniform, but it has sometimes existed on circular spots, while the interstices were of a natural colour. The redness has sometimes disappeared suddenly; and I think both this and the last circumstance were only seen in severe attacks. The eruption was commonly smooth, but, in a few instances, elevations have been noticed, which might be named large red papulæ, occasioning more roughness than I have ever seen in measles. Previous to desquamation, the white morbid cuticle was often raised in the form of very small round elevations; and around the throat, where hartshorn had been applied, and on places peculiarly liable to pressure, as the elbows, large vesicles, containing a turbid liquid, were sometimes seen. The morbid cuticle, on coming off, generally showed its place supplied by a new scarf skin, but in more than one instance the cuticle was easily rubbed off, and disclosed a soft pulpy cutis vera. About twenty cases occurred where no eruption could be detected. I have observed no unvarying connection between the state of the eruption and the severity of the disease, for death has occurred under all the following states of skin, viz. redness, such as commonly attends scarlet-fever,—vivid redness,—a dark red or deep purple or livid colour,—a very faint redness,—and an entire absence of cutaneous discoloration. I have also seen mild attacks, attended by all these different states of skin, excepting the purple one. The desquamation alone has seemed necessarily connected with the cutaneous inflammation, being speediest and most complete where the redness was greatest and most extensively diffused. Where there was no redness, no exfoliation of cuticle took place. The temperature was not measured, but I may mention, that, though many complained of great heat, a greater number had no steady feeling of this kind, while some throughout the whole attack had occasional shivering. In both this and the typhus fever, the sensations of the patient, with respect to heat and his actual temperature, seemed very much influenced by the state of the atmosphere. The pain and swelling of throat was less than is common in severe cynanche tonsillaris, and if this symptom bore any proportion to the danger from the disease, it was an inverse ratio. Much uneasiness always arose from a collection of viscid mucus in the mouth and throat. In the fourth form of the disease, in particular, the quantity of saliva and mucus in the mouth was great, which seemed to arise, in part, from these secretions being in this variety greater than in the others, but mainly from an insensibity to this stimulus,—whence the feelings, which, in other cases, led to their expulsion, were not experienced. In many instances, the difficulty of swallowing was great; and this seemed to arise, in a few instances, from pain of fever, from swelling, but most commonly from a rigidity of the lower jaw, and parts concerned in deglutition. On the tonsils and uvula whitish specks were common, seldom arising from ulceration, but, in general, from lymph there deposited. The roof of the mouth was commonly red, and in several vesications (in a few instances blackish) were observed on the velum pendulum palati. The tongue was often moist and whitish—sometimes clean; it was often dry and hard in severe cases, and then its colour varied from black to brown, or a yellowish tint. When, under these circumstances, a favourable change took place, the hard state was converted into a moist one, and the papillæ were then commonly very prominent. A subsequent exacerbation often converted this improved appearance of tongue into a smooth glossy state. Black sordes sometimes formed on the teeth, and this, as well as dryness of tongue, seemed connected with sensorial disturbance. An affection of the joints was mentioned as not uncommon in the last stage of this disease. This was a swelling of the wrists and hands, less commonly a similar affection of the knee-joints and other articulations, attended with much pain, and feeling of want of the power of motion. This, in general, went off in a few days, but, in one instance, it seemed to be converted into a permanent paralysis. Affections of the chest or belly were very seldom observed in this fever. After the disease, several instances of matter issuing from the ears, and of suppuration in the submaxillary glands were observed, but only twice or three times did I know the internal inflammation of the throat terminate in the formation of matter. In a very few cases only I saw swelling of the feet after the disease. The following seems, however, an instance of internal and external dropsy, following scarlet fever: A boy, aged nine, having, a few weeks before, had scarlet fever, was found labouring under the following symptoms, from which, in a few days, he died;—œdema of feet, hands, and face; great difficulty of breathing; pale countenance; urine very scanty, and frequently voided; pulse 150 In protracted cases, a peculiar smell was very perceptible.

Washing with cold water was in many instances of this fever made use of, but, from the comparatively low temperature of body, the relief hence obtained was not great. The cold affusion was not tried: I believe it is now in this, and all other diseases, entirely laid aside.

Bleeding was but rarely practised, but from its effect in a few ases, wherein, towards the conclusion of the epidemic, it was ied, I would, under similar circumstances, adopt it more freuently. I have bled adults about twenty-four hours from the ommencement, in all the forms except the last; and in the first nd second varieties, the benefit has been very decided. In hese instances the recovery was always—cæteris paribus—much nore rapid than on any other occasion. In the second variety have seen the dryness of tongue, rapidity of speech, and inipient delirium, almost immediately removed by the detraction f eight or ten ounces of blood. In the last variety described, f admissible at all, bleeding I think could only be practised in he earliest periods of attack. When the pulse has assumed he very feeble or imperceptible beat, and coldness of the exremities taken place, both of which sometimes occurred on the irst or second day, blood-letting would probably only accelerate he fatal termination. On the whole, my small experience of leeding in scarlet-fever would lead to the conclusion, that it is remedy of much promise in certain circumstances of this disase, but requiring, in its adoption, much attention to existing ircumstances.

Purgatives were not omitted, but I was somewhat disappointd in the degree of benefit derived from them. In the second orm they seemed most serviceable, and they were useful also n the first variety. In the third and fourth forms I could erceive no benefit from active purges, but rather the reerse.

Emetics were frequently employed, and they only gave relief o the throat, obstructed by swelling or mucus, and their effect n this way was generally very great. In the variety attended y great depression and apathy, the strongest emetic had someimes no effect, and in this case, even before any appearance of lelirium or coma existed, the throat was nearly quite insensible o the tickling of a feather. In several instances emetics have een used three or four times, with much pleasant effect; lattery, however, they have been exhibited only in very urgent obtructions of the throat, for in a few cases they left a distressing nd long-continued sickness; and I think I have known them ncrease the tendency to sensorial derangement. Besides emeics no internal application afforded much relief to the throat. The vapour of hot water sometimes relieved the rigidity of arts; and olive oil, or the oily mixture, somewhat removed he tenderness of mouth. Stimulating gargles could not be orne.

As external applications, ammoniated oil, blisters, and sinapisms were applied: the first of these, if begun early, and diligently used, seemed as serviceable, and was less painful than the others.

Nothing seemed more necessary than to watch and check the tendency to sensorial disturbance. With this view the head has been shaven, blisters applied to the nape of the neck, sinapisms put to the feet, and warm fomentations to the legs. Of these the two first used in conjunction seemed the most useful. In infants and children, in whom danger was always ushered in by drowsiness and coma, these symptoms were often removed by a blister put for an hour or two to the back of the neck. The affection of joints was often very distressing, but was commonly removed by warm fomentations. In more severe cases antimonial powder, with a minute portion of calomel and opium, exciting diaphoresis, generally carried it off.

Stimulants, as wine, brandy, and sulphuric æther, were used in the latter stages of the 3d and 4th forms. Sometimes they seemed useful; but on other occasions they appeared to raise a fallen pulse, only that it might sink more completely when their immediate effect was over. In certain states their effect was so equivocal, the pulse improving, while the tongue became harder and blacker under their use, that it was difficult to say whether they were beneficial or otherwise. In one case, of the worst form, I thought to save a patient by wine, but was disappointed. Forty eight hours after attack, her pulse was imperceptible; extremities cold; and she lay in complete stupor. On the exhibition of a few glasses of wine, given in small doses, the pulse and heat became natural, and her senses returned. In a few hours, however, she became confused and delirious; the eyes turned red; and she again soon relapsed into stupor. This effect of excitement seemed as easily removed as induced; for, upon strong sinapisms being put to the feet, she again revived, and the bad symptoms went off. An attack of pained joints, occurring in her very weak state, exasperated the fever, and she ultimately sunk. In fine, it has appeared that there are cases of scarlet-fever, wherein stimulants are admissible; but then the situation is very desperate.

Though I have nearly confined myself to mere matters of fact, these observations have extended to a greater length than was contemplated. On this account, some general observations, which I wished to make, must be omitted. I would only now observe, that typhus appeared here to arise solely from contagion; indeed, the other alleged causes, as poverty, filth, &c. could not, in this place, be supposed to operate. Many clear proofs occurred of infectious diseases being communicated by persons who had never laboured under the complaint. Among others, were several instances of midwives, previously occupied with patients in scarlet-fever, carrying the disease to women whom they attended in labour. Several remarkable contrasts, in point of susceptibility, to contagious disease, were observed; some catching it by the slightest communication, while others remained safe after the most thorough and continued exposure.

Within the last few years, typhus and small-pox, with its modified form, and scarlet fever, have prevailed in various parts ot this country. Typhus, as reported by Dr Kerr, appeared in Aberdeen in the beginning of summer 1818, being brought there by a female pauper lunatic from Glasgow. "About 2400 cases," says he, "were treated in our public institutions from the 1st September 1818 to the 1st of September 1819." Scarlet fever even now prevails, or did so very lately, in several parts of Aberdeenshire.

Alford, April, 1821.

III.

Report of Cases Treated at the Ophthalmic Hospital, Chatham, communicated to Professor Thomson. By ANDREW SMITH, M. D., Hospital-Assistant.

A KNOWLEDGE of the lively interest you take in the investigation of the diseases of the eyes would alone, without the tie of a promise made on leaving the depot-hospital at Edinburgh, have been a sufficient inducement for me to draw up and transmit to you the following account of the diseases which occurred in the Ophthalmic Hospital at Chatham, and of the means which were adopted to remove them, during the ten months in which I lately did duty as medical assistant to that institution.

Chatham, as you are already aware, is the station to which the greater part of our soldiers, from whatever cause rendered unserviceable, are sent previous to being placed upon the pension-list. They consist, in general, of men rendered unfit for farther military duties, either by actual disease or its consequences, by length of service, old age, or a general decay of the constitution, and are, with a few exceptions, persons addicted to most of those irregularities and vices which tend to produce disease, or retard its removal when once brought into action. Under such circumstances, you must easily conceive what disadvantages are to be experienced,—what difficulties are to be daily encountered,—and what extreme and constant caution is necessary in practising upon such a class of individuals.

In the treatment of the diseases of the eyes these inconveniences were particularly felt, and we had occasionally to contemplate with sorrow the ravages of disease, which experience warranted us in concluding might have readily been stopt, in persons blessed with more sound and vigorous constitutions. Amongst the instances of acute ophthalmia, which were, comparatively speaking, but few, it was now and then found impossible to carry into effect a plan of treatment sufficiently active to ward off the consequences of over vascular action; whilst in chronic inflammation, the removal or amendment of which often depended so much on the improvement of the general health, difficulties not less strong and insurmountable at times presented themselves, but which will come more in place to be noticed hereafter. The success of the treatment, however, upon the whole, was highly satisfactory,—a circumstance which was to be attributed, in a great measure, to the zeal and abilities of Staff-Surgeons Lindsay and Murray, who held successively the principal charge, aided by the judicious and very superior arrangements of the much and justly esteemed principal medical officer at the station, Dr James Forbes, Deputy-Inspector of Hospitals.

The diseases had in general been contracted on foreign stations, particularly in those of warm climates, such as the East Indies, West Indies, Ceylon, Cape of Good Hope, Gibraltar, Malta, Ionian Islands, &c. and had all of them been more or less modified by the effects of hospital-treatment, previous to their reaching Chatham. The individuals who appeared to have suffered most were those bearing marks of the scrofulous diathesis, and such of that class, particularly, whose eyes were naturally weak or full, prominent and light-coloured. The observance, indeed, of the latter circumstance, in so many instances, led me to pay considerable attention to the subject, and to endeavour, if possible, to ascertain whether eyes of any particular colour were more subject to disease than others, and the results of my investigation are contained in the following Return, No. I. To be able, however, to draw any general conclusions, it would be necessary also to determine what proportion the light colours bear to the dark in healthy eyes, which I have done, as far as my opportunities would admit, and given in the same Return. From it you will see that the proportion of light eyes amongst the individuals of the latter description was considerably greater than what it was in those affected with disease, which certainly goes directly against the opinion I previously entertained, and which I have both heard verbally stated, and read in authors, that persons with light-coloured irides were more prone to ocular disease than those in which they are of an opposite character. Without an inquiry, however, of this kind, and carefully contrasting the numbers of each, one would very naturally be led to conclude, that light eyes were more subject to disease than dark ones, as much more than half the number of the patients which came under treatment, belonged to the first division, but not more than ought to have done, had the colour no property of predisposing to disease whatever.

No. I.

COLOURS.	Diseased Eyes.	Totals of Light and Dark.	Proportion of Light to Dark.	Healthy Eyes.	Totals of Light and Dark.	Proportion of Light to Dark.
Light Blue	45			590		
—— Grey	37		Nearly 2 to 1	239		Nearly 5 to 2
—— Brown	21			313		
—— Mixture*	13	116		358	1500	
Dark Blue	30			300		
—— Grey	14			151		
—— Brown	13			128		
—— Mixture	3	60		84	663	
	176	176	2 to 1	2163	2163	5 to 2

In by far the greater number of the patients the morbid action commenced first in one eye, yet in most of them the other, either from the same cause, from sympathy, or in consequence of some past excitement, sooner or later also suffered, as you will see by reference to Return, No. II. From it you will find, that out of 134 cases in which one eye was first affected, the other in 110 of these was subsequently attacked, some in the course of a few hours, and others not till after two, four, six, eight, ten, twelve, and even sixteen months; the most common time, however, was between the second and thirtieth day. Of the two eyes, the right, in most of the cases, was the one which first took on the diseased action, but whether that was purely accidental, or arose from its having a greater tendency to become diseased than the left, I have not yet, even from inquiries directed to the subject, been able clearly to ascertain. The night, as you will see from the same Return, appears to have been the period the most favourable for the developement of those complaints, particularly of such of them as were of an inflammatory character, which constitute by far the greater proportion of the cases. This may be accounted for, 1*st*, By the great diminution of temperature and heavy dews which generally take place during the night in hot climates, and to which soldiers on guard (a situation in which many of our patients were first attacked) must unavoidably be exposed; 2*dly*, By the greater chance there is of catching cold, a very frequent cause of the complaint in question, during sleep, and perhaps more or less covered with perspiration, upon being exposed to the very slightest exciting causes, such as lying opposite or near to an open door or window; and, 3*dly*, By the difficulty, I may say impossibility, of foreign bodies which may have accidentally got under the lids before going to rest, making their exit during sleep, and, consequently, their retention there must produce an unnatural stimulus, which, if continued for a sufficient length of time, gives rise to a more or less severe attack of active inflammation,—a circumstance I have frequently had occasion to observe in the course of my own practice.

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* Under the head of Light and Dark Mixture, I include all those colours which appeared to be compounds of the other three, or which do not readily admit of a simple definition.

No. II.

Number of Cases.	Of which one eye was first affected.	Of which both were affected at the same time.	Of which one only was affected.	Number of Eyes affected during the Day.	Number of Eyes affected during the Night.	Eye first affected, and the number of each.	
						Right.	Left.
176	134	42	24	184	202	95	39

With regard to the causes of the different diseases, I may here observe, that sudden variations of temperature, exposure of the eyes to strong lights or currents of air, external injuries, mechanical and chemical stimuli, were assigned as having been the principal agents in producing the morbid changes observed. As these, however, will be treated of with more propriety, when we come to the description of the several diseases themselves, I shall take no farther notice of them here, nor indeed trouble you with any more observations, but proceed to give separate statements, of the nature, causes, and treatment of the different complaints, in the same order as they stand in the general return, No. 3, which is intended to show you, at one view, the total number of patients treated, and also what proportion of them had been under cure, previous to their arrival at the invalid depot.

No. III.

DISEASES.	TOTAL TREATED.					Of which were treated from the commencement in the Ophthalmic Hospital.		Of which were treated partly in the Ophthalmic Hospital.	
	Acute.		Chronic.						
	One Eye.	Both Eyes.	One Eye.	Both Eyes.	Total.	Acute.	Chronic.	Acute.	Chronic.
Ophthalmia Simplex -	8	15	6	20	49	22	15	1	11
Mucosa -	1	8	1	11	21	7	6	2	6
Purulenta -	1	2			3	1		2	
Pustulosa -	2	5	1		8	5		2	1
With granulated Lids -			14	127	141			14	127
Lippitudo - -		4		10	14		3	4	7
Psorophthalmia - -			3	1	4		2		2
Hydrophthalmia - -			1		1			1	
Iritis - - -	8	1	2	1	12	9	2		1
Staphyloma - - -			11		11				11
Cataract - - -			6	4	10		4		6
Amaurosis - -				4	4				4
Entropeon - -			4	2	6		1		5
Pterygium - -			3	1	4				4
Hordeolum - -		2			2	2			
Hemeralopia - -				2	2				2
Tumor fungos. e callo oculi			1		1				1
Totals	20	37	53	183	293	46	33	26	188

Ophthalmia Simplex.—Forty-nine cases of this disease were admitted into hospital. In twenty-three of them the inflammation was in the acute stage, and in the other twenty-six it had passed into the chronic form. Of the former class, eight had the disease in one eye, and the rest in both; of the latter six in one, and twenty in both. Thirty-seven of these patients were treated, from the commencement of the disease, in the Chatham establishment, but the other twelve had been under treatment elsewhere previous to their arrival there. The disease for which they were taken into hospital was perfectly removed in all but one, and in his case there only remained a very slight redness of the eyeballs, with some watering, especially on exposure to a strong light, or a current of air. In two of the number treated from the first, in the ophthalmic hospital, a slight opacity of one cornea of each remained, which was occasioned, in the first of them, by the healing of an ulcer that existed on his admission, and in the other by the cicatrization of a superficial wound of the cornea, which was the cause of his being taken into hospital. In four of the twelve, who had been under previous treatment, more or less extensive opacities of the cornea, from the healing of ulcers in a former disease, existed when they were discharged, and in a fifth case both eyes were disorganized, in consequence of a severe injury received, by the unexpected explosion of a mine; but in all of them every symptom of inflammation was completely removed, previous to their leaving the station.

Ophthalmia Simplex Acuta.—In the greater number of instances this disease occurred in a very mild form, and yielded for the most part readily to very simple treatment. The symptoms and appearances of the inflammation were varied considerably, not only by the duration of the disease, but also by the nature of the exciting cause: An increased vascularity and redness of the external parts of the eyeball and linings of the palpebræ, lachrymation, intolerance of light, sensation of sand or gravel under the lids, with itching, smarting, and more or less pain in the eye itself, or in the surrounding parts, were the symptoms which most commonly presented themselves to our notice. *The increased vascularity* in most of the cases was general, and affected not only the eyeballs, but also the lining of the lids; the vessels were observed for the most part to run as nearly as possible in straight lines, seldom to give off many branches, and in general, to terminate about half a line behind the cornea, although now and then they were seen reaching to the very margin of that tunic, and in a few instances even extending for a short way on its surface. Their number and size varied very much in different individuals, in some only a few small branches were observed ramifying here and there on the surface of one or both eyeballs, and giving rise to but little redness, whilst in others, they were so numerous and matted together, as to give the whole eyeball a uniform red appearance, which was for the most part of a bright scarlet hue. *An increased flow of tears* was a symptom which attracted very general notice, especially in the commencement of the disease, and may be said to have occurred in all of the cases except five; in these it was rather diminished than increased, and the patients complained of an unusual dryness of the whole eyeball, with pain or soreness on moving the lids, and a sensation of heat and burning in the organs themselves, which symptoms were completely removed by a copious lachrymation, which in all the five occurred in the course of the disease for the most part about the third or fourth day. By one part of the patients, the tears were described as being very hot and acrid, scalding and excoriating the parts over which they passed, whilst by the others, they were stated to produce almost a directly opposite feeling, which peculiarities there was no possibility of accounting for by any evident dissimilarity of disease. *An uneasiness of eyes upon exposure to light* was a symptom which occasionally occurred, although not so generally as to warrant its being set down as one of the regular characteristics of conjunctival inflammation. It was most evident in cases in which the inflammation was either deep seated, or more or less modified by the scrofulous diathesis, and in them it sometimes proved very troublesome and difficult to remove. *The sensation of something rough below the eyelids, described as resembling sand or gravel,* was a very regular symptom in the commencement and early stage of this species of ophthalmia, and appeared to be principally occasioned by the enlarged blood-vessels of the lining membrane of the palpebræ; as in the instances in which these were divided, and their contents allowed to escape, the sensation immediately vanished, and did not return at least till they had regularly filled again. *Itching and smarting of the edges of the tarsi,* particularly towards the canthi, were sensations frequently complained of, and sometimes continued for several days, though in general they very soon gave place to a greater or less degree of pain, a symptom, which, next to the increased vascularity, was certainly one of the most common attendants on acute ophthalmy. It was said by some to have been the first circumstance which led them to discover their disease, whilst others asserted that it did not prove troublesome till after most of the other symptoms already described had been experienced.

The pain differed considerably in its site, nature, degree, and duration, in different individuals; some complained of it as being seated either in the eyeball itself, or directly under the upper lids, others referred it to the eyebrows, temples, forehead, or occiput, and in a third class it affected several of these parts at the same time. When it occurred in the eyeball, it was for the most part of a dull aching description, or else acute and attended by a sensation of a deep internal pulsation. In a few instances it was said to resemble the pricking of pins, and frequently to dart from the eye right across to the posterior part of the head. When it felt as if it had its site in the lids, it was for the most part of a darting or pricking nature, and again, when in the head, it was in general dull, and attended by a sense of weight and uneasiness in the forehead, yet occasionally it was very acute, lancinating, and accompanied by much throbbing of both the external and internal carotid arteries, with considerable increase of temperature of the face and lateral parts of the head. In respect to severity and duration it varied very much, in some, (whatever was the description of pain,) it was so severe as to prevent them either sleeping or lying still for a moment, but in the greater proportion of cases, it was very slight, indeed in several of them not more than a simple tenderness and soreness of the affected parts. In the cases in which it was very severe, or of a pricking description, it generally occurred in paroxysms, varying from two minutes to an hour, or even two, while again, in the instances in which it was dull or pulsatory, and affecting either the eye and head at the same time, or only one of them, it was for the most part pretty constant, at least, the individuals were seldom entirely free from it, although frequently it suffered considerable exacerbations and remissions. The evening was the time when pains of the last description generally became aggravated, in which state they continued till about two or three o'clock in the morning, when a change most frequently took place.

In addition to these general symptoms, a few others of less consequence were now and then complained of, such as a sense of fulness and over distention of the eyeballs, inability to move them freely in their sockets, more or less dimness of vision, &c. When the latter symptom was complained of, there was always an unusual dulness, and muddiness of the cornea, observable on examination; and as that was more or less distinct, vision was found to be more or less impaired, and the patients, under such circumstances, generally described surrounding objects as appearing to them involved in a thick fog, or as seen through a thin gauze.

Causes.—Cold acting either directly on the eye, or through the medium of the constitution, appeared, from the statements of the patients, to have been by far the most general cause of the inflammatory complaint we have just been describing. Its effects appeared to have been most severe, when conjoined with a current of wind, strong examples of which were lately furnished us, by the arrival of two detachments of invalids from the Mediterranean, most of whom suffered more or less from inflammation of the eyes, upon their reaching the cold windy latitudes of England, and in nearly forty patients, the disease under different forms existed to such a degree, on their arrival at Chatham, as to render them objects for immediate hospital treatment. From the same causes, many individuals, either on guard during a stormy night, or lying opposite to open doors or windows, became affected with the complaint in question. By sleeping on the cold ground in the open air, during a longer or shorter period in a summer's night, the same state was occasionally produced, even where there was no wind, and but little sensible cold, to a person in motion. In such cases, the disease was probably occasioned by the action of the humid atmosphere, which is generally found to a greater or less height, on the surface of the earth during the night, after a hot summer's day, and which seems to be particularly hurtful to soldiers on guard in warm climates. Exposure of the eyes to a bright light, especially when long continued, was assigned as another cause of ocular inflammation, and instances occurred where the strong glare of the sun, particularly when reflected from sandy or rocky strata, as is frequently the case in our southern and eastern colonies, gave rise to more or less severe attacks of ophthalmia. Much exertion of the eye in looking at minute or distant objects, was said by a few to have produced their disease; thus a tailor became affected with inflammation of both eyes, after two days almost constant labour at his trade, the greater part of which time he was employed in sewing a coat which required very much attention; and a serjeant, while in the habit of using, almost constantly during the day, the telescope, to watch the motions of a neighbouring telegraph, became affected with the same complaint. External injuries, mechanical and chemical stimuli, were also found to have had occasionally their share in producing the disease, although not to the same extent as the other just mentioned.

Treatment.—The cure was attempted, in every case, by general or local remedies, either alone or conjoined. Amongst the former may be classed abstraction of blood from the system, emetics, nauseating doses of antimonials, purgatives, &c., and to the latter belong local blood-letting, blisters, and the various washes, drops, and unguents. General blood-letting was employed, in cases in which the pain was very severe, or where the constitution sympathised much with the local disease, as was occasionally the case when it arose from exposure to cold; but in none of them was it ever carried to the great extent recommended and practised so frequently some time ago by many practitioners of this kingdom. It was found to matter but little from whence the blood was taken, provided the necessary quantity was abstracted, and on this account a vein of the arm was generally opened in preference either to the external jugular or temporal artery; indeed, any advantage which might result, from a quantity of blood abstracted by the latter method, appeared to me to be more than counterbalanced, by the excitement and fresh irritation, necessarily excited by opening that artery, and then stopping the hæmorrhage when the desired quantity had been taken. The application of bandages, or ligatures of any description, round the head of a person affected with inflammation of the eyes, cannot be strongly enough reprobated, especially if that degree of tightness which is often necessary to restrain the bleeding from an wounded artery, as they must naturally retard the free passage of blood to the upper parts of the head, and consequently cause an increased action of the vessels below the point of obstruction, which must to a greater or less extent involve those of the eyes. If it be supposed that the temporal artery has much share in keeping up the inflammation, it had better be secured at once by a ligature, which I have in a few instances seen done with considerable benefit. The quantity of blood abstracted was regulated by the severity of the symptoms, the nature of the constitution, and the effects produced. In none was less than a pound ever taken, and in few more than two at one time, although it was occasionally found necessary to repeat at intervals the abstraction of the same quantity two or even three times, before the activity of the disease could be said to be overcome, and the inflammation brought to such a state, as it could be treated properly, by the other remedies to be hereafter mentioned.

Emetics.—In many cases where the constitutional excitement was but slight, and the pain of the head was dull and aching, the free evacuation of the stomach by an emetic often proved highly serviceable; for not only did it frequently remove entirely the pain, but likewise effected an evident diminution in the degree of severity of the local inflammation, and, if followed up by proper local treatment, and an occasional purge, was often found sufficient to remove the disease. I may here remark, in case that an inspection of the eye be made during the action of the emetic, that the vascularity often appears even more increased for a time, yet, after all exertion is over, and the patient has remained quiet for a few minutes, the change for the better will begin to be perceptible. In cases in which the inflammation runs very high, and where there is considerable danger from a momentary increase of action, the remedy we have now been speaking of ought certainly not to be employed, till after blood-letting has been premised. Where occasion for its use occurred, six grains of tartrate of antimony were in general dissolved in a pint of common water, the half of which was ordered to be taken immediately; and, should full vomiting not be produced in the course of half an hour, the remainder was to be exhibited. This medicine, when given as above mentioned, generally acted also very freely on the bowels, and thereby rendered the immediate exhibition of simple purgatives unnecessary.

Nauseating doses of antimonials were seldom had recourse to in the first instance, unless the disease was of a very mild description. They were seldom if ever given till after the increased action had been previously more or less reduced, by a general or local abstraction of blood, or by the effects of a full vomit They were found very useful in cases in which there appeared to be a great tendency to inflammation, and where the symptoms showed a disposition to become aggravated again, as soon as the system had recovered from the state it had been brought into by previous evacuants. In such cases, if nauseating doses of the tartrate of antimony be administered directly after the emetic, the system will for the most part be kept in such a languid state as to guard against a subsequent increase of disease. The same practice was also found very useful in cases where the inflammation had attained such a degree of severity as to render the employment of full emetics improper. In order to insure its full effect, it must be given in very small doses, and frequently repeated, perhaps *a quarter of a grain* every half hour, but this must be regulated according to circumstances, as what will only produce slight sickness in one person, will occasion copious vomiting in another.

Diaphoretics were a class of remedies not much trusted to when the disease appeared to be simply local; but when it depended on, or was one of the symptoms of a general constitutional derangement, they were frequently administered with evident benefit. In catarrhal ophthalmia they were particularly employed, and certainly with such advantage as to entitle them to a distinguished rank amongst the remedies recommended for the cure of that species of inflammation. The compound powder of ipecacuanha, either alone or combined with the pulvis antimonalis, was the medicine most generally prescribed; if alone, fifteen grains were ordered morning and evening, but if combined, only twelve, with three of the James powder. By these doses a pretty moderate, yet constant determination to the skin was kept up, which was generally soon followed by a diminution of the disease, not only of the eye, but also of the constitution.

Purgatives.—You will, perhaps, be astonished that I have not taken an earlier opportunity of mentioning this remedy, especially as it is a general law in our profession, that the *primæ viæ* in all diseases, but more particularly in those of an inflammatory nature, ought to be fully and repeatedly evacuated as soon as possible. This apparent omission is accounted for by some of the remedies already mentioned (antimonials either as vomits or only to produce nausea) having almost, in every instance, at the same time acted freely as a purge, which rendered it unnecessary to exhibit medicines solely with that intention, for such a time as the use of the above preparation was persisted in, which was, in most of the cases, till the severity of the inflammatory symptoms had evidently been reduced. After it was discontinued, however, it was customary to prescribe occasionally a dose of sulphate of magnesia, so as to keep the bowels moderately open.

Local remedies.—Abstraction of blood, either directly from the inflamed part, or from its immediate vicinity, is certainly a part of the local treatment deserving of our first and not least serious consideration. That was effected either by cupping, the application of leeches to the lids or temples, or by scarification of the inner surface of the palpebræ. By the first method blood was often taken in considerable quantity, either from the temples or nape of the neck, but as its operation was attended with considerable pain, and was in some instances, when done in the former situation, followed by a good deal of fresh excitement, it was a practice not very generally employed, indeed I may say never, except where, from some peculiarity of constitution, the use of leeches was followed by a troublesome inflammation and swelling of the parts, as actually occurred in several instances. The second method, or that by the application of leeches to the lids or temples, was the plan most generally adopted, and certainly with the greatest success. The temple close to the outer edge of the orbit appeared to be the most eligible and safe situation for applying them, as in several cases, in which they were placed upon the lids, a good deal of irritation, swelling, and soreness of these parts occurred, which prevented for a time not only the necessary examination of the diseased parts, but proved a great impediment to the application of the other remedies. In several instances, in which the local vascular action had been overcome to a certain extent by other treatment, the application of two or three leeches to the inner surface of the lower lids was followed by immediate and lasting benefit, but if employed before the action had been previously more or less reduced, the irritation caused by their bites and everting the lid, more than compensated for any amelioration which the quantity of blood drawn produced. As soon as they became detached the bleeding was encouraged by warm fomentations, either with simple or medicated fluids.

Scarifying the lining membrane of the palpebræ was a third way in which local depletion was sometimes performed, but seldom, if ever, till after the disease had passed its height. In cases in which there existed a considerable degree of turgidity of the vessels about the fifth or sixth day, accompanied by little or no pain, and where some of the other modes of detracting blood had been previously practised, much advantage was often experienced from dividing them across with the shoulder of a lancet, encouraging the bleeding for a few minutes by warm fomentations, and then dropping over the surface of the lid some of the vinum opii, or solution of nitrate of silver. In several cases of this description, the method of treatment just stated was employed, and in the greater number of instances the vessels never were observed again to attain the same degree of distention, the disease from that time yielding quickly to the use of slightly stimulating applications.

Blisters were very frequently employed in the treatment of acute inflammation of the eyes, and certainly often with very marked advantage. They were applied according to circumstances; either to the temples, forehead, back of the ears, nape of the neck, or arms. The back of the neck or behind the ears were the situations, however, which were in general made choice of, as, when applied to the temples or forehead, the excitement which they produced was sometimes found to extend as far as the eyes, and in these cases to be injurious rather than beneficial. They were found most useful in cases in which either general or local blood-letting had been previously employed, and where there still existed a good deal of local increased action, without much pain, or where the latter symptom, if it did exist, was of a dull aching description, and either confined entirely to the eye, or affected the head at the same time. In such cases a blister applied either to the nape of the neck, or behind one or both ears, and kept discharging for some time by the savine cerate, often produced an evident diminution of the inflammation, and insured a speedy cure.

Collyria.—Medicated washes, if we except the decoction of poppy heads or chamomile flowers, were but seldom employed during the active stage of inflammation, as the pressure which was necessary to be made by an eye-glass in order to insure the fluids being kept for any time in actual contact with the diseased part, was found to be productive of considerable fresh irritation. The decoction of either of the anodynes above mentioned was, in several cases in which the disease ran high, employed as a fomentation, and with great relief. They were for the most part used immediately after the application of leeches, as at that time their anodyne effects were equally well obtained, whilst their degree of temperature encouraged the bleeding. In cases of a more slight description, water, either pure or with a little acetate of lead dissolved in it, and made tepid, was frequently employed for washing the external parts of the lids. As soon as the activity of the disease was overcome, a weak lotion of sulphate of zinc, in the proportion of two grains to an ounce of water, was applied three or four times a-day, by means of an eye-cup, and was directed to be kept in contact with the inflamed parts about ten minutes each time. In several cases in which the pain was very severe, and not alleviated either by blood-letting or the use of any of the anodyne fomentations just mentioned, considerable and lasting relief was often procured by exposing the affected parts to the steam arising from a camphor and opium mixture, * when brought to a boiling heat for ten minutes, two or three times a-day.

Drops.—When the disease happened to be very active, and accompanied with much pain and profuse lachrymation, a solution of opium, or some other anodyne, was dropped between the edges of the tarsi, near the outer canthus, five or six times a-day; but in cases in which the inflammation was more moderate, the *tinc. opii* was employed in the same way twice a-day, and in no case with the least bad effects, in few with but little apparent advantage, and in far the greater number, if properly persevered in, with perfect success. When the linings of the lids continued affected, with increased redness, after the general disease had been removed, a solution of the *nitras argenti*, in the proportion of four grains to an ounce of water, was found to be the most effectual remedy for removing it, when dropped on the surface of the lids, gently everted, two or three times a-day. When that preparation, however, did not succeed, the tincture of kino, or a saturated solution of alum or tartrite of antimony, applied, by a camel-hair brush, to the diseased parts, generally soon removed it. The liquor plumbi acetatis, either pure or diluted, with an equal proportion of the watery solution of opium, was also occasionally employed in cases of this description, and often with much advantage.

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* ℞ Mist. camphor. ℥ij.
Tinct. opii. ʒss.
Liquor ammon. acet. ℥ij.
Aquæ rosarum ℥iv. M.

Unguents.—In but few instances of this disease did there appear to be any necessity for the use of ointments; but when a case did occur in which the lids felt stiff and uneasy in the morning, nothing more was in general employed than common white ointment, (unguentum ceræ,) or a little citrine ointment, mixed with a large portion of almond oil.

Having now given you a separate account of the different remedies employed, I shall just state, in a summary way, the practice which was for the most part pursued, when a pretty smart case of acute ophthalmy was admitted. General or local blood-letting, according to the nature and severity of the symptoms, generally commenced the treatment. This was in most cases followed by an emetic of tartrite of antimony, and the eyes, after its operation was finished, were directed to be fomented with warm water, or a decoction of poppy head or chamomile flowers. A blister, in the course of a day or two, (perhaps sooner,) was applied behind the ears, or to the nape of the neck, and a solution of the extract of opium was regularly dropped between the lids several times a-day. As the pain and other symptoms of acute inflammation subsided, a gradual change was made in the treatment, from the soothing and anodyne applications to those of an astringent and slightly stimulating nature, such as the lot. aluminis, lot. zinci sulphatis, and drops of the vinum opii. The two former were used by means of an eye-cup, and in that way kept in contact with the inflamed part for ten minutes four times a-day; the latter was dropped between the tarsi night and morning; by which practice, together with proper diet, a cure was, for the most part, effected in ten or twelve days.

Ophthalmia Simplex Chronica.—This form of disease had in every instance been preceded by more or less acute inflammation, which had either been reduced by previous treatment, or overcome simply by the efforts of nature. The disease in all of them was removed by the means of cure employed, though most readily in those in which the active inflammation had been subdued, by the interference of art. The degree of severity of the acute stage, as far as could be ascertained, had varied considerably in the different individuals, though in most of them it had been mild, and in some even so transitory, as not to have attracted much attention, for several were not aware of the eyes being inflamed till it was mentioned to them, either by some of their comrades, or the inspecting medical officer. When it had come on in this gradual and insidious way, its cure was always more tedious and difficult than under almost any other circumstances; and even in some a slight degree of redness and watering continued for several weeks after their dismissal from hospital, which seemed only to give way to the effects of time.*

The general symptoms which marked this complaint, were an increased vascularity and redness of the external parts of the eyeball, and lining of the lids, lachrymation, diminished transparency of the cornea, and a more or less impaired state of vision. The degree of inflammation varied according to the duration of the disease, or the severity of the acute stage, and may safely be said to have exhibited all the different gradations, in respect to severity, which the acute stage already described is said to have done. In some, the redness was principally confined to the lids, whilst in others, its principal site was the external tunics of the eyeball, and in a third set, it was found affecting all those parts at the same time. The vessels ran in a tortuous winding direction, and terminated for the most part at, or a little behind, the edge of the cornea; though in a few instances they were observed extending for a line or more on its surface, and in those cases the nebulosity was always most distinct. They had in general the appearance of being suffering from over distention, and seemed as if they did not possess the power of relieving themselves from their gorged state. Their contents were of a dull purple hue, which afforded an almost certain mark, by which we could distinguish the chronic form from the acute stage. In several cases, there appeared to be a double set of vessels affected. The first were quite superficial, and evidently connected with the conjunctiva, as they could be readily raised or moved about with that membrane, but the other was more deep, and had its site either in the cellular membrane, connecting the conjunctiva and sclerotica, or on the surface of the latter, and was in general of a darker colour, and larger size than the superficial set. They could be seen extending to the very edge of the cornea, but never distinctly to penetrate its substance, although there is reason to believe that they did so, because the turbid and muddy appearance of that tunic was always most distinct in this peculiar form of inflammation. The colour of the blood in these two sets of vessels appeared to differ considerably, being in the deep-seated of a dark purple hue, and in the superficial of a light red; but whether that apparent dissimilarity was real, or only depended on the different situations of the vessels, I cannot pretend to decide; yet at the same time, I feel inclined to be of the latter opinion, as I have repeatedly remarked deep-seated vessels of their usual dark colour, running forwards to the edge of the cornea, and there becoming superficial, and extending backwards for some way on the surface of the conjunctiva, with their contents to all appearance of a much lighter hue from the point of reflection. *An increased flow of tears* was always a more or less troublesome symptom, particularly on exposure to a bright light or a current of wind. They were in general said to produce a sensation of cold to the parts over which they passed, and, therefore, had a quality the directly opposite of that which they were said to possess in the acute inflammation. *Diminished transparency of the cornea, and dimness of sight,* were symptoms which varied much in degree, according to the duration and severity of the present or preceding disease. In cases of considerable standing, or where the inflammation during the acute stage had run high, the usual shining transparent state of the cornea had given place to a dull milky appearance, which, according to its density, rendered vision more or less imperfect, and made all objects appear to the patient as if involved in a mist, or seen through a thin gauze or veil. This state, as has been already mentioned, was always most distinctly observed, in cases in which the inflammation was deep seated, and in them also its removal was effected with the greatest difficulty. Where the inflammation was but slight, or of recent date, very often neither of these symptoms existed, and now and then we met with instances of dimness of vision, according to the statements of the patients, without there being any unnatural appearance of the cornea. In a few patients, slight, constant, or periodical headachs, proved an annoying symptom, but they appeared to be more rheumatic than the consequence of the local disease, and were generally removed by perseverance in the use of bark and the mineral acids. In several individuals, especially where the disease had existed for some time, a small nodule of fatty matter was observed under the conjunctiva, near to the inner margin of the cornea, which always remained unchanged, after all the other symptoms had been removed. *

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* I am at present in the habit of meeting with daily examples of this fact amongst the numerous recruits which are almost constantly arriving here (military depot, Isle of Wight) from the different parts of the kingdom. In many of them, either from the single or conjoint action of intemperance, irregular hours, and long marching, especially in wet and windy weather, a species of chronic inflammation of the eyes is produced, which I find to require more time and trouble to effect its removal than even that of the most severe forms of acute ophthalmia, or of the chronic stage, which, from mismanagement, sometimes succeeds to them.

Causes.—Improper treatment during acute ophthalmy, constant exposure of the eyes to bright lights, or much exertion of the same organs in examining minute objects, constant and immoderate indulgence in the use of spirituous liquors, irregular hours, cold winds, &c. were found to have been the principal sources of the disease in question. The first of these was the least frequent, the second and third were more common, but the three last were by far the most general.

Treatment.—Stimulants and astringents were the remedies usually employed for the cure of chronic ophthalmia, and were generally applied in the form of washes or drops. Of the former, the principal were those composed of sulphate of zinc, alum, nitrate of silver, or spirit of wine and vinegar; of the latter were the *vinum opii*, *liquor plumbi acetatis*, *solut. argenti nitratis*, *tinctura kino*, *tin. aloes et myrrhæ*, *vinum myrrhæ*, *&c.* The sulphate of zinc lotion was found most useful in cases in which there was a degree of weakness of the eyes, with copious lachrymation, and where the vascularity was not very much increased. In such cases it was used in the proportion of two grains of the sulphate to an ounce of pure water, and kept some considerable time in contact with the inflamed parts, by means of an eye-glass, three or four times a-day. The alum wash was principally employed where the relaxation of the conjunctival lining of the lids was considerable, and where the blood-vessels were much distended, and run rather superficially. It was applied five or six times a-day, in the proportion of five, six, or eight grains to an ounce of water, and kept in contact with the inflamed part ten minutes each time. The nitrate of silver in the proportion of one grain to an ounce of water, was employed as a collyrium, with most advantage in cases in which the disease was principally seated in the lining of the lids, and where there was, or appeared to be, a tendency in that membrane to become excoriated, or affected with superficial ulcerations. The last, or that composed of spirit of wine, vinegar, and water, according to the formula given in Cooper's Surgical Dictionary,* was found particularly useful in cases in which there was considerable relaxation of the conjunctiva covering the eyeball and lining the lids, accompanied by profuse lachrymation, and slight intolerance of light, with more or less preternatural redness of the tarsi. It was generally employed at first of the undermentioned strength, and then increased or diminished, according to the effects it produced.

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* Having observed this circumstance so frequently in old cases of chronic ophthalmia, and in the eyes of persons who had been much subject to ocular inflammation, I make now no hesitation in giving it as my opinion, if that appearance is observed, that the individual must, sometime or other, have been subject to considerable disease of that eye, and seldom, if ever, do I find it not verified by the persons on statement.

Of the drops, the vinum opii was that most frequently employed, and I may add, was by far the most successful. It was used in almost every instance, and only now and then did there occur cases in which it proved hurtful; in them its application was followed by much smarting, and a profuse discharge of hot tears, with increase of vascularity, &c., sometimes requiring the application of leeches, and anodyne lotions, to allay the excitement. In several cases its effects appeared to diminish after using it for some time; but as soon as this was observed, it was discontinued for a few days, and some of the others were employed, by which means the action was changed, and then its use was resumed again with success. It was applied by making the patient incline his head a little backwards, and then gently raising the upper lid, and allowing two or more drops to fall from the extremity of a quill filled with it, near the outer canthus of the affected eye, which practice was repeated again in the evening, or oftener if necessary. It ought never to be repeated till after all the marks of the excitement produced by the previous application had completely disappeared, as if sooner it was apt to excite active inflammation. *Liquor plumbi acetatis* was used, either pure or diluted with an equal portion of the watery solution of opium, where there was much general relaxation, or where the disease was of long standing, and marked by much vascularity, particularly of the conjunctiva lining the lids. It, like the former remedy, excited a very considerable increase of redness for the time, but often in the end effected a complete removal of all the morbid symptoms. *Solut. argenti nitratis* of various strengths was found useful in cases of the same description, as the last drops, and also in those in which the disease was principally seated in the lining of the lids, more particularly where there was a tendency to ulceration of the conjunctiva or edges of the tarsi. We generally commenced using it in the proportion of two grains to an ounce of distilled water, and gradually increased it to six, as the eye became accustomed to its action. I have often observed it when used of the latter strength at first, or after some time even stronger, produce no evident benefit, yet, when diluted so as to contain about two or three grains to the ounce, the change was often very soon perceptible. This probably arose from the former possessing a greater stimulating power than was conducive to the restoration of the healthy action, yet not sufficiently strong to excite active inflammation, and thereby effecting no marked alteration on the disease, till it was brought to that degree of strength which was suitable for effecting the former of those purposes. *Tinctura kino*, tinct. aloes et myrrhæ, vinum myrrhæ, &c., were all found useful in cases in which the affected parts had become accustomed to the action of the others already described, and under such circumstances, they were frequently employed with great advantage. By the cautious and constant employment of some one or other of the drops or washes enumerated, a cure in by far the greater number of cases was readily effected, yet in a few, the amendment went on so slowly, as to induce us to try some additional remedies, such as blisters, setons, local blood-letting, &c. The former of these remedies was generally applied to the back of the ears or nape of the neck, and kept discharging for some considerable time; the second was invariably placed in the back of the neck, and retained there till the disease was removed from the eyes; and the last was generally effected by scarifying the linings of the lids, and encouraging the bleeding for a short time by warm fomentations; after which, the vin. opii or solut. argenti nitratis was diffused over their surface. This last mode of cure was only had recourse to, when the vessels were very inactive, and so much gorged with blood, that they appeared to be but little affected by any of the local remedies already noticed.

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* R. Acet. Distillati ℥i.
Spirit. Vini Tenuor ℥ss.
Aquæ Rosæ ℥viii. M.

Ophthalmia Mucosa.—Twenty-one cases of this disease were treated, nine of which were acute, and the remainder chronic. In two patients the complaint was confined to one eye, and in the other nineteen it affected both; in all of them a cure was effected, by the treatment employed. As the mucous or puriform discharge, which was invariably present in this form of inflammation, constituted almost the only difference between it and the common ophthalmy, already described, it would only be troubling you with unnecessary repetitions, were I to enumerate the various symptoms here, or even detail the treatment, where it did not differ materially from that employed in simple inflammation of the external tunics of the eye. I shall therefore content myself with simply stating the diagnostic marks, referring you for the general characters of the disease to the species of ophthalmia above alluded to. The discharge, as has just been remarked, formed the principal, indeed I may say the only mark of distinction, between the two diseases of which we have just been speaking. It was more or less copious, according to the duration of the complaint or the severity of the inflammatory symptoms. In some it was so trifling, as only to be seen towards the inner extremity of the lower lids, in the morning before the patient had washed himself, or on the inner surface of the lids, rendered visible on gently everting them; in others it was very copious, besmearing not only the whole of the tarsi, but also the outer surface of the lower palpebra, and forming a medium by which the former were found to adhere during the night. It differed very much in appearance and consistence in different individuals; in some it was thin and slightly yellowish, resembling bad cream, whilst in others it was thick and ropy, like mucus or flakes of lymph. When of the former description, it was generally found collected towards the inner canthi, or all along the edges of the tarsi, about the roots of the ciliæ, when again of the latter, it was seen principally on the inner surface of the lower lids, and about the point of reflection of the conjunctiva on the eyeball. This difference of situation probably depended on the nature of the fluid discharged, being, when thin and puriform, readily washed away by tears, but when thick and ropy not much affected by them. The vascularity of the lining of the lids, in proportion to that of the eyeball, appeared to be much greater in this species of inflammation than in the common acute ophthalmia, which circumstance, together with the discharge and other appearances, tend, in my opinion, to prove, that the primary seat of the disease was in the lining of the lids, and that the inflammation of the conjunctiva covering the eyeball was merely symptomatic of it. In a few of the cases which co-existed with acute catarrh, small spots of effused blood were observed here and there under the conjunctiva, an appearance which I have very frequently remarked in severe catarrhal ophthalmia, so often, indeed, that I should now have very little hesitation in ordering a patient to bed, who might present himself thus affected, and prescribe the remedies necessary for combating the ocular disease, and its complication, the catarrh, without making any particular inquiries of the individual himself. You may perhaps say that this would be placing too much faith in mere appearance, particularly as ecchymosis under that tunic does occasionally arise from other causes, such as blows on the eye, foreign bodies, especially when of a rough or pointed description, getting under the lids, &c. That effusion of blood does occur from these causes I must readily admit, but, at the same time, I would remark, that, when thus induced, the appearances are very different from those exhibited by it, in the modification of disease we have just been describing. When occasioned by a blow, it is for the most part pretty extensive, dense, circumscribed, and of a bright scarlet colour, with little or no surrounding inflammation, at least till some time after the accident. When it is the consequence of the action of extraneous bodies getting under the lids, it is in general also considerable, and confined principally to the upper and lower parts of the eyeball, where it is covered by the palpebræ, and is seen occurring at the extremity or in any part of the course of a vessel, upon which the foreign body may have acted; but when it occurs in catarrhal inflammation, it appears in very thin, small, irregular spots, generally at the termination of small vessels, and so slight as to conceal from view the ramifications of other small branches which it may happen to cover, it is observed on all parts of the globe, but more, if any thing, towards the canthi than under the lids, and is occasionally seen very distinctly close to the outer and inner edges of the cornea. In addition to the appearance of the effusion itself, there was a peculiar watery look of the eyes, which was of considerable advantage towards forming a ready diagnosis, and was such, that, if once carefully observed, it was, in general, easily recognised again. It is not that copious discharge of tears, observed in acute ophthalmia, but it is a shining watery appearance of the whole eye-ball, and a distinct collection of the lachrymal fluid, all along the inner edge of the lower tarsus, which, however, does not collect to such an extent, as to run over the lids and cheek, unless when the former are forcibly shut, and then it is only for the moment, as immediately upon their being opened again, the same appearance is exhibited, and only disappears as the severity of the disease abates. The inflammation in most, if not in all the cases, was said to have been occasioned by cold, acting either directly on the eyes, or through the medium of the constitution. The treatment of such of the acute cases as were not complicated with catarrh, may be said to have differed but little, if at all, from that already detailed under the head of Simple Acute Ophthalmia. When, however, much constitutional excitement existed at the same time, which could be traced to the influence of cold, the plan of cure was principally directed to effect its diminution or removal, as along with it the local inflammation was, in general, found to disappear. With this intention, twenty or thirty ounces of blood were drawn from the arm, a tartrite of antimony emetic was immediately exhibited, and the patient was directed to have a warm bath in the evening, which was to be followed by a scruple of Dover's Powder. If the local increased action happened to run high, as a precautionary measure, four or six leeches were applied to each temple, and the eyes fomented with some tepid anodyne fluid. Next day, if the affection of system was not found to have been sufficiently reduced, the depletion was again repeated, as also the warm bath and the diaphoretic. About the third day, by this treatment, not only the constitutional, but also the local disease, was found to have undergone a very considerable diminution, and the latter, in general, to be in such a state as to require the employment of stimulating and astringent applications, to stop the mucous discharge, which then was found to be one of the principal marks of disease of the eye. With this view, a solution of the nitrate of silver, to the proportion of from three to six grains to an ounce of water, was found to be by far the most successful remedy, when cautiously persevered in. In cases, however, in which it did not appear to effect any considerable improvement, by the third, or, at farthest, the fourth day, a blister was applied to the back of the neck, and kept discharging till the disease was nearly, if not entirely cured. The last remedy, in every instance in which it was employed, was followed by immediate benefit, and soon by a total cure. As long as any constitutional affection existed, the warm bath, the pediluvium, diaphoretics, and gentle purgatives, were occasionally prescribed. Where the complaint was mild, or of a chronic form on admission, the solution of the nitrate of silver was immediately employed, and if it was found to be of long standing, or attended by any considerable discharge, a blister was applied to the back of the neck, and kept discharging till the healthy action was nearly if not completely reinstated, which was sooner or later effected in every instance of the disease which I have just been describing.

Ophthalmia Purulenta.—In only three cases admitted was the discharge so copious, as to warrant their being set down as examples of purulent ophthalmia. In all of them the disease was in its acute stage, and in two affected both eyes, but in the third it was confined to one: they were all cured by the treatment employed.

Symptoms.—A sensation of stiffness and inability to move the lids with their usual degree of freedom, sense of weakness and weight on the upper part of the eyeball, and an increased discharge of tears, were the symptoms first complained of in this disease. These in the course of a few hours were followed by a still more copious lachrymation, sensation of sand or gravel under the lids, intolerance of light, swelling of the palpebræ, particularly the upper ones, and an increased vascularity of the whole of the conjunctiva, covering the eyeball and lining the lids, with severe pain, confined in one of the cases to the eye itself, and accompanied by a sensation of pulsation in the bottom of the orbit, but in the other two, affecting both the eye and head at the same time. On the morning following the appearance of these symptoms, the tarsi were found more or less firmly glued together, and upon a separation being effected, a sudden and copious discharge of tears, mixed with a puriform fluid, took place, which was followed by temporary relief. The discharge from this time kept gradually increasing, till about the third day, when it, as well as the other symptoms of active inflammation, were found to be at their height, and chemosis commencing to form. The last symptom, when once it commenced to make its appearance, increased very rapidly, and was followed by an evident diminution of the redness of the conjunctiva, and a sensation as if the eyeball was nearly quite fixed in its socket. In two of the cases the chemosis was general, forming a complete ring round the cornea, but in the other it was partial, and occurred only towards the outer canthus. In one it was so very considerable as nearly to cover the whole of the cornea, but in the other two it was more trifling, and did not conceal above a line and a half of that tunic, all around its circumference. At first the swelling was of a dark red colour, but as it increased it gradually got more and more pale, till at last it exhibited nearly the appearances of a piece of muscle, from which the blood has been well washed. The degree of vision was not in the least impaired from any affection of the cornea, though it was now and then for a moment confused, by strings of mucus or pus extending across the anterior part of the eyeball, and either impeding the passage of the rays of light to the retina, or giving to them a wrong direction. The constitutional irritation in all was pretty considerable, towards the commencement of the disease, being marked by a quick, hard, and strong pulse, hot skin, thirst, loss of appetite, &c. As the activity of the local inflammation abated, the intolerance of light, swelling of the palpebræ, and puriform discharge diminished, and the lining of the lids became of a brick-red colour, and very much relaxed and thickened. As the chemosis disappeared, in like manner did the conjunctival tunic of the eyeball become much relaxed, which was marked by the formation of folds or doubling of that membrane, in different situations, during the varied motions which the organs were required to perform.

The disease, in two of the cases, was traced to the action of a cold wind, while on sentry, and in the other it appeared to have been occasioned by a severe blow on the eye, while in a state of intoxication. The treatment in the early stage was very active, and directed with a view both to the alleviation of the constitutional and local disease. The patients, on admission, were immediately ordered to bed, and a vein in the arm was opened, from which blood was allowed to flow till syncope, or a state nearly approaching to it, was produced. This for the most part happened by the time thirty or forty ounces had been abstracted, provided the orifice was sufficiently large, and the patient kept sitting up during the whole of the operation. After the arm was bound up, a tartrite of antimony emetic was immediately exhibited, which in general produced a free evacuation, not only of the stomach, but also of the intestines. The operation of this remedy invariably left after it a considerable degree of languor and debility, which was accompanied by an evident diminution of the inflammation of the eye, and the celerity of the pulse, and to keep them in that state was now the object of our treatment. For that purpose, the nauseating doses of antimonials, which have been already mentioned under the head of Acute Ophthalmia, were exhibited, and, as an additional security, six leeches were applied to each temple, and a blister to the back of the neck, which was directed to be kept open by the application of savine cerate. After the leeches had fallen off, the bleeding was encouraged by fomenting the temples with a decoction of poppy heads. During the first two or three days of the disease, the matter was frequently washed away from the surface of the eyeball and linings of the lids by the same fluid, and a moderately strong solution of opium dropt between the tarsi five or six times a-day. Should the pain, inflammation, or constitutional irritation again increase in spite of these measures, the general blood-letting was repeated, as also the application of the leeches, and the patient was ordered to continue the use of the antimonials, and have a warm bath, in the evening. When the activity of the complaint had been thus reduced, and the chemosis was now very considerable, an attempt to moderate that symptom was made, by cutting out a portion of the conjunctiva, at its most prominent part, and allowing the serous fluid to escape. This operation was invariably followed by much advantage, if not performed till after the active inflammation was overcome, as the swelling disappeared much sooner about the parts where the excisions were made, than any where else. The anodyne decoction was now changed for a solution of alum, in the proportion of about six grains to an ounce of water, which was generally at first used warm, by injecting it under the lids five or six times a-day, by means of a common elastic gum syringe, such as that which is sometimes used in the operation for hydrocele. As the eye became accustomed to the change, it was used cold, and its strength also increased to ten grains, while, at the same time, the vinum opii, or a weak solution of nitrate of silver, was used instead of the solution of opium. By these means the chemosis, puriform discharge, and increase of vascularity, were generally in the course of six or eight days very much diminished. The alum wash was still continued, as also the solution of nitrate of silver; the latter however of an increased strength, containing about six grains to an ounce of water. This remedy produced a considerable effect in diminishing the discharge and removing the inflammation from the eyelids, and when continued, with the alternate use of the lotio zinci sulphatis and lotio aluminis, a complete cure was effected. In all the cases the vascularity of the lining of the lower lids continued much increased, with considerable lachrymation and slight purulent discharge, after all diseased appearances were removed from the eyeballs. These symptoms were in time removed, by the drops of the solution of nitrate of silver, together with the use of the *diluta citrine ointment.* The bowels, during the whole progress of the cure, were kept moderately open, by small and repeated doses of neutral salts.

Ophthalmia Pustulosa.—Eight individuals affected with this form of inflammation came under treatment; in seven of them the disease was confined to one eye, and in the eighth it affected both. In two it was of several days standing, and had been modified by previous treatment, while in the others it was in its very commencement, and yielded readily to the treatment employed. Two of them had laboured under a similar complaint twice before, and all the others had been generally subject to weak eyes. The increase of vascularity was only partial, and occurred in three towards the inner canthus, in four towards the outer, and in the eighth case on the upper part of the eyeball. Close to the margin of the cornea, corresponding with the increased vascularity, there was regularly observed a small pustule, filled with a whitish puriform fluid, around which the vessels appeared to terminate, considerable lachrymation in all, and in six slight intolerance of light. The pain, which was always present in the commencement of this disease, was generally referred to the spot where the pustule afterwards appeared, and was described as being of a pricking description, but in none was it either violent or of long duration. The exciting cause in all appeared to have been cold acting directly on the eyes. The treatment pursued was particularly simple, and at the same time very effectual. On admission the patient was ordered a purge of neutral salts, and the pustule was freely touched, with a piece of pointed caustic, so as to produce a slough. In the course of the day, if the pain at all increased, two or three leeches were applied to the temple, and the eye was fomented with warm water. The following day the slough began in general to separate, but the vascularity had not diminished. The solution of nitrate of silver, in the proportion of six grains to an ounce of water, was now dropt on the slough, twice a-day, and continued till a cure was effected. For the first two or three days after the caustic was applied, no diminution of the inflammation was perceptible, but as soon as the slough had regularly separated, and the small ulcer began to heal, all marks of inflammation were found to vanish with amazing rapidity, and the eye often in the course of a day got completely free from disease. Much advantage was always found to result from confining the patients to the ward, and carefully guarding against exposure to cold, or currents of air. The diet in this, as well as in the other varieties of inflammation, was at first very low, and gradually increased as the symptoms gave way.

(To be continued.)

IV.

Case of Stricture in the Intestines, accompanied with Scirrhous Liver. By T. M. Greenhow, Esq. Surgeon, Newcastle-upon-Tyne.

Mrs L. a lady of about 64 years of age, thin, and of a sallow complexion, had been for some years subject to stomach complaints, and had occasionally passed gall-stones. During the summer of 1818, she was attacked with slight inflammation of the liver, which was removed by the ordinary treatment. For some time afterwards she enjoyed unusually good health. In November 1819 I was again consulted by her. I found her spirits greatly depressed in consequence of some late afflictions in her family; and that, having withdrawn from an active employment in which she had been for many years engaged, she had yielded to great indolence both of mind and body. To these causes principally I attributed the following complaints: A dull pain above the right os ilium, which had existed for some weeks, and was chiefly felt in walking, together with an occasional sense of fulness at the stomach, attended with frequent eructations. Since the pain had taken place, her bowels had become in some degree irregular; but her appetite continued good; her tongue was clean; her pulse natural; and she slept well. She felt no pain or uneasiness on pressure, nor could any enlargement or hardness be discovered in the region of the liver. The following medicines were prescribed.

℞ Pil. hydrargyri.
Rhei comp. āā gr. v. M. omni nocte sum.
℞ Infusi gentian. comp. ℥iss.
Magnesiæ sulph. ʒi.
Tinct. cardamoni comp. ʒi. M. cap. bis indies.

She was also strongly recommended to use moderate exercise, and to engage her attention by some amusing employment. Under this plan her bowels became more regular, the pain above the ilium diminished, and she seemed in all respects better. The medicines were soon discontinued, and she afterwards took mild purgatives only, as circumstances required, but with uniform advantage, till the pain ceased altogether. On Saturday the 5th of February, she thought herself remarkably well, but her bowels had not been opened on that, or on the preceding day, and her accustomed purge had failed to operate. More powerful ones were prescribed, and enemas were also used to assist their operation. During the three following days, the evacuations, though natural in appearance, were too scanty to be satisfactory. The abdomen was now becoming tense and tumid; and she complained of occasional griping, attended with borborygmi and eructations; nevertheless there was no fixed pain or tenderness about the abdomen, and her pulse continued moderate. Dr Headlam was now consulted. Purgatives, assisted by enemas, were persevered in. Much difficulty was encountered in getting the latter to pass. The evacuations became every day more scanty; the tension and tumefaction of the abdomen increased. We could distinctly feel the course of the small intestines greatly distended. Frequent vomiting ensued, but no feculent matter could be detected in what was rejected from the stomach. We were now convinced that some considerable obstruction existed in the course of the intestines, and entertained the most unfavourable view of the case. Medicine was of no avail, and her strength was rapidly declining. On the 15th we determined, as a last resource, to try the effect of liquid mercury. Accordingly, I got her to swallow a pound of it, but no evacuation was produced. Towards the afternoon of this day she sunk rapidly, being much oppressed, with retching, and died at half past 9 o'clock P. M. without a struggle. No delirium took place, and the pulse was never materially affected.

Thirty-six hours after death, with the assistance of my friend Mr Leighton, I examined the body. Previous to making our incision, we remarked the great bulk of the abdomen. When its contents were exposed, there appeared a slight inflammatory blush over the small intestines, which were enormously distended with air. The stomach was nearly empty. On tracing the course of the intestines, we found much feculent matter accumulated in the colon. The cæcum was very large. At the junction of the colon with the rectum was a stricture so complete, as barely to admit the introduction of a large probe. At this part the gut was much discoloured, and looked as if it had been tied down with a cord to the upper part of the sacrum. Its coats were greatly diseased, being much thickened, and of a scirrhous hardness; and there were attached to it many fatty tubercular appendages, some of which were in a state of suppuration. Above the stricture the colon was much enlarged, and formed a complete cul de sac; below it the rectum was contracted through its whole length. The sketch which accompanies this case exhibits the appearance of the parts when removed. We were of course anxious to ascertain in what part of the intestines the mercury was to be found; but this was not easy, in consequence of their very distended state. To facilitate our search, therefore, ligatures were passed round the duodenum, and the colon above the stricture. The whole intervening intestines were then removed from the abdomen; but in doing this the mercury, by its weight, forced away one of the ligatures, and escaped into the abdominal cavity. It had probably been buried amongst the accumulated feculent matter at the head of the colon. We found the liver attached by old adhesions to all the neighbouring parts, and in a state of great disease. It was diminished in bulk, hard, and incompressible; its colour externally was a dark livid blue; and when cut into, its texture throughout was completely changed, being white and cartilaginous. The gall-bladder contained some dark inspissated bile; and two large gall-stones were found in the ductus communis choledochus.

This scirrhous condition of the liver must have commenced many years ago, and it seems surprising that so little inconvenience should have arisen from it; for though, from the previous history of the case, I was led to suspect some disease there, the symptoms were far from indicating the great extent of it. It did not materially interfere with the functions of the stomach and bowels, for the appetite had been almost uniformly good. and the evacuations were natural in appearance until the fatal obstruction took place. The stricture sufficiently accounts for the irregularity in the bowels, and the slight dyspeptic symptoms connected with it; it also explains the cause of the pain above the right ilium, which I conceive to have been occasioned by the great accumulation of feces in the large intestines; and this opinion is confirmed by the relief which always followed the action of a purgative.

Newcastle-upon-Tyne,
March 10, 1820.

REFERENCES TO THE SKETCH.

A The colon above the stricture, forming a cul de sac.
B Part of the rectum below the stricture.
C The stricture.
D A whalebone probe passed through the stricture as far as it would go, thus showing its dimensions.
E Fatty tubercular appendages,
F The meso-rectum.

V.

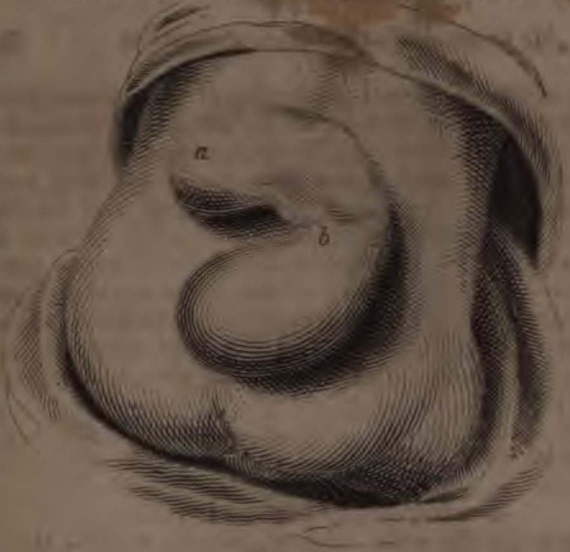
Case of Spina Bifida Bilobata. By THOMAS LE GAY BREWERTON, Esq. Surgeon, Bawtry, Yorkshire. (*With an Engraving.*)

THE perusal of Dr M'Keever's cases of Club-foot, associated with Spina bifida, has induced me to transmit the following singular case of Spina bifida, with a bilobate tumour.

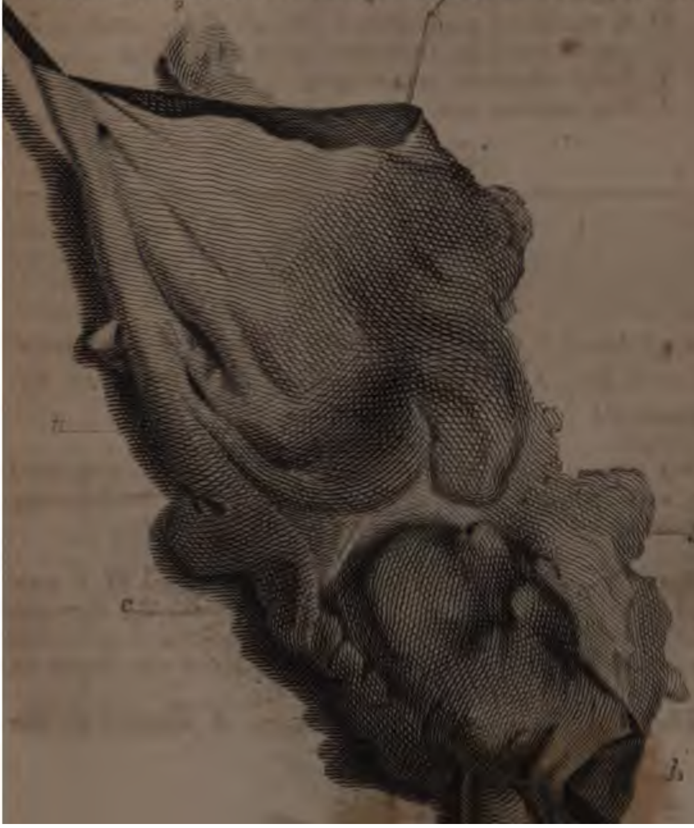
April 16, 1820.—Mrs ——— was delivered of a male child at the full time, breech presentation. From the examinations during the course of the labour, the presence of two scrota was inferred. The child being born, a tumour was found on the loins, as in the accompanying drawing.

The tumour, composed of two lobes, is attached to the

Mr. Brewerton's Spina bifida bilobata. Vol. XIII. P. 378



r. Greenhow's case of Stricture, between the Colon & Rectum.



body; the upper or atlantal lobe is covered with cutis to nearly the union of the lobes, but at (A) there is a portion of the lobe not so covered with cutis.

The lower or sacral lobe is pendulous and diaphanous.

Both lobes of a dark-red colour, and some serum tinged with red oozes from the lower one.

Between the lobes the surface is rather irregular and sublobated.

On placing the lower lobe between the eye and a candle no ramifications of vessels, or expansions of nervous branches appears to be on its surface, or dispersed through the liquid.

On pressing the lobes, the child, by its cries and struggles, indicates that much pain is occasioned, and the tumour becomes perceptibly lessened.

The mother attributes this affection to a contusion on her loins from a fall during pregnancy.

27th.—The child died yesterday, the tenth day from its birth, in a state of great emaciation. Convulsions preceded its death.

The lower lobe of the tumour had become gangrenous, and the lower extremities paralytic. The knee-joints have become contracted, and after death remain so. The left foot is, at the ankle-joint, slightly inflected, so that the external edge is downwards.

Dissection.—The tumour is composed of two sacs or cysts, each lined with a dense ash-coloured membrane. The sacs are empty; but it must be noticed, that a serous liquid has been continually oozing from the inferior lobe since birth. The sacs do not communicate with each other, but both communicate with the spinal canal by a narrow neck.

The necks of the sacs are in contact and connected with the vertebral canal by the same opening of the vertebræ.

The lowest lumbar vertebræ apparently divided, the left half appearing natural, but the right half forming a semicircular process or curve to the right side, leaving an aperture on the right side of the mesial line, through which existed the communication between the spinal canal and the tumour.

The spinal marrow rather protrudes from the canal; as by cutting across the base of the tumour a portion of it is divided, but it cannot be said to have occupied the tumour.

The inner parietes, or membranous lining of the cysts, appears to be continuous with the dura mater of the vertebral canal, but differs from the usual structure of this membrane by being ash-coloured, opaque, and more thick; but this difference must have taken place since birth, otherwise the lower lobe could not have then been diaphanous.

I wish that I could have concluded my communication with announcing a successful mode of treatment; but, as "knowledge is power," I hope the attention of the medical profession, being directed to the subject of spina bifida and club-foot, as associated diseases, may lead to practical good.

VI.

Extraordinary Case of Paraplegia. By J. Peake, Member of the Royal College of Surgeons, London.

James Archer, ætatis 30, was attacked, on Sunday night, January 18th, 1819, with numbness in the feet and legs, and that extending upwards to the thighs gradually to about the middle of the lumbar vertebræ. On the following morning he was called by his brother to get up to his work as usual, but found himself unable to move his lower extremities, and had not been able to give any alarm in the course of the night of this extraordinary attack, having slept in a building detached from the dwelling-house: He had walked, the preceding day, a distance of ten or twelve miles, and had retired to bed at an early hour. His general occupation for the preceding two months had been daily labour at a farm-house in the neighbourhood; and on the Saturday, the day before this occurrence, he had worked hard, and felt pain about that part of the back from whence the numbness would appear to proceed. This pain he had also felt on the Sunday. In this helpless state he was removed to the parish to which he belonged, and I was desired immediately to attend him. Upon my arrival I found him lying upon a straw-bed on his back; and, upon uncovering the lower extremities, I found them cold, and that he had not the least power of motion or feeling in them. He told me also that the lower part of his body was in the same state. In answer to a question, "Whether he had passed any urine since the attack?" he directly answered, he had done so, but that involuntarily, and without the least perception of having done it at the time. The feces also came away involuntarily. It appeared to me very clearly, from the foregoing account, that pressure alone upon the spinal marrow could produce these symptoms, and I was led to question him particularly as to any hurt or injury he might ever have received there. He at first assured me that he had no recollection whatever, either at a later or an earlier period of his life, of having received any hurt or injury; but, upon pressing him still farther to endeavour to recall to his mind some such accident, he told me, that, about nine or ten weeks before, he then recollected carrying a sack of oats up a ladder, and when he had got up about nine steps, it broke, and he fell upon a hard pavement with the oats upon his back. He was bled at the time, and soon got well, and felt no more of it, until he felt the pain, which had come on a day or two before this attack.

He had been fourteen years a soldier, and had been but lately discharged; had served in many campaigns, and in various climates, and had led a very dissolute life. Upon examining the spine the projecting processes of the vertebræ appeared natural, except the one at that part where the numbness seemed to be issuing from, and there the point of the finger rather fell in, and left an indentation, as if one of the lumbar vertebræ had been thrust a little forward upon the spinal marrow. From this particular part he said distinctly it was that the numbness and loss of sensation proceeded. And he likewise complained of a peculiar pain, extending up the spine from this part to the back of the neck.

There was now not the least appearance of redness or inflammation, or of there having been any at the time of the accident. He had felt, he said, neither much pain nor inconvenience, particularly after the first day; and whether the injury thus sustained had caused a slow inflammatory action, and that matter had at length formed, and pressed upon the spinal marrow, or that blood had become extravasated, and it was causing pressure, or from the slight derangement which appeared in the situation of the bones—that the pressure of bone itself was the cause,—which of these circumstances it might have been, I am unable to say, but that there was pressure of some kind, was self-evident, and of that kind or nature which appeared to admit of but little if any means of relief.

I immediately prepared the poor man's mind to look forward with great uncertainty to a successful termination or issue of his most unfortunate and melancholy case.

I bled him freely, administered some strong cathartic medicines, and had him removed to a comfortable bed. A repetition of these remedies was also observed, but without the least benefit or advantage.

The patient continued for ten days or a fortnight just in the same state, suffering no pain, with a mind, for the most part, I should say, cheerful, and with an appetite so good that, to use his own expression, not only at this time, but many weeks after, he could eat any thing that was brought before him in the shape of food, it mattered not what.

About this time, from lying so long in one position, there appeared to be upon the hip-joints, on each side, an abrasion of the skin, attended with a degree of blackness and partial separation of the cuticle, as if incipient gangrene was taking place, and at my next visit I found that this was not confined to the skin, but extended rapidly to the contiguous muscles, spreading widely all around, and penetrating deeply in the direction of the hip-joints.

Another gangrenous abrasion of surface had also commenced in the back, immediately over the seat of the injury, and seemed to be making as rapid a progress as the others. His health now seemed to be suffering; and from the appearance of the ulcerations, which were in a state of complete mortification, I was led to expect, under such a state of things, that my patient would survive but a very short time. His appetite now failed him, and he had frequently cold rigors, succeeded by flushing heats running over him, but was altogether free from pain. He still passed both feces and urine involuntarily, and the loss of sensation and motion were just the same. The ulcerations around the hip-joints, however, began now to assume a most dismal appearance; for sloughings of a most extensive nature were taking place on both sides, as well as from the integuments over and on each side the spine, and that to a most extensive degree. The fetor arising from these places was most intolerable; and, with all the precaution that could be used by the attendants, the atmosphere of the room, to a person who came from a pure atmospheric air, was scarcely respirable. Its impurity seemed also to affect the persons around him, for they complained of sickness, vertigo, loss of appetite, &c. and came out with blotches. They still ventilated the apartment, which was a confined room, as well as they could, by keeping open the front-door during the greater part of the day, and the windows also. The sloughings at length came away, and laid bare the hip-joints on both sides, destroying not only the integuments over the joints, but penetrating through the capsular ligaments, and exposing a surface which measured in diameter not less than six or seven inches; that in the back still more extensive, passing through the intercostal muscles, so that the intestines behind became partially exposed.

The bones also became carious, and a partial exfoliation took place from the processes of the vertebræ, and the whole of the os coccygis came away. In this most horrible state he was still free from pain, slept well, and at times ate and drank heartily. A disposition also to gangrene presented itself in the lower extremities at different places, particularly on each side of the heel, about the part where the tendo Achillis is inserted, and on the inner side of the foot.

As the case had appeared from the first altogether hopeless, I did not urge the necessity of his taking medicine regularly, being well convinced, that, in a case of this nature, it would have but very little effect, but directed my attention principally to keeping the wounds as clean as possible, and I found nothing had so good an effect in doing this as a poultice made with stale beer-grounds, and bread and milk, or oatmeal, and had them well washed frequently with milk and water.

Although in this dreadful state he suffered so little pain, and had so little knowledge of the actual state under which he existed, except from description, that he was led himself to think he might still live and do well,—at a time when the lower half of his body, and the whole of the lower extremities, were, if I may be allowed such an expression, "a living mass of putrefaction," for dissolution of the parts had actually taken place while life existed.

Slight ulcerations at length took place, and extended gradually *upwards* by the side of the spine, in a direction towards the shoulder, above the seat of the injury, and from these he felt much pain, and suffered considerably.

Into this state he had been progressively advancing; and on the 24th of March, better than two months from the time I had first seen him, he tells me he feels as well as ever he did in his life, (except that he cannot move or stir the lower extremities,) although the room in which he lies, from the fetor arising from the ulcerations, is so impregnated with the most nauseous effluvia, that I think a dissecting-room is not equal to it. His appetite at this date, he says, is good. He sleeps well, but the pulse is very weak, and much accelerated. He does not complain of thirst. The tongue is free from fur. His upper extremities are much emaciated. Coughs much, and perspires slightly every night. From this time he began gradually to sink, suffering, however, no other pain than what arose from the ulcerations above the seat of the injury; and on the night of the 28th of April he breathed his last,—from the time I was first called to him, exactly three months and ten days.

I had particularly wished, *post mortem*, to have examined the spine, and to have satisfied myself perfectly as to the cause of this extraordinary case, and had obtained the consent of the poor man to allow me to do so, but his attendant neglected to inform me of his death at the time, considering, he said, it was impossible, in the state he was, for me or any other individual to remove that part of the spine, and he was, consequently, buried before I was aware of his death.

Chipping Ongar, Essex,
January, 1821.

VII.

Observations on the Tænia Solium; and on its Removal from the Human Intestinal Canal by Spirits of Turpentine. By ROBERT KNOX, M. D. Member of the Wernerian Natural History Society.

SIR,—Since the publication of the learned and elaborate work of Rudolphi on intestinal and other worms,* the numerous disputed points relative to the origin, growth, and propagation of these, seem to have been tacitly given up by medical men in favour of the opinions of that learned and ingenious author; or the inquiry, perhaps, has, from its abstruseness, been deemed beyond the present bounds of science. To the admirers of natural history it would be superfluous to offer any apology for these brief remarks on one species of intestinal worm; and to the practical medical man, few inquiries can be more interesting, as its aim is to elucidate the origin and treatment of an exceedingly obscure and untractable complaint.

It has happened to me to witness the disease of *tape-worm* on an extensive scale, and even, to a certain extent, to experiment on its nature. The observations I have made seem to throw some additional light on this very obscure subject. Should it appear differently to the readers of your widely circulated Journal, I shall still feel satisfied in having performed my duty to science, by submitting these cases and remarks to the public.

The colony of the Cape of Good Hope is remarkable for the general salubrity of its climate. It enjoys, indeed, almost an immunity from the host of diseases, to which, in other countries, mankind is exposed; to this there are a few exceptions, amongst which may be reckoned the occasional prevalence of *tape worm.* It was long ago remarked by Dr Sparrman, that the colonists, or more particularly those inhabiting the banks of the great Fish River, "had very little knowledge of one of the most frequent and most troublesome disorders to which they were subject, and that was worms."* He observes, moreover, "that adults, and even elderly persons, seemed more generally troubled with the complaint than children."

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* Entozoorum, sive Vermium Intestinalium Historia Naturalis. Auctore C. A. Rudolphi.

This so great frequency of the disease amongst the colonists I have never observed, nor was my attention directed towards this subject previous to October 1819, when *tape worm* became so general amongst the troops as to resemble an epidemic. The greater part of these men had just returned from a short though active campaign of a few weeks; they had been exposed to some rainy weather, and had remained for a short time encamped on the open field; yet these circumstances were productive of no sickness, nor did any ailment occur, excepting the singular prevalence of intestinal worms, and more particularly of *Tænia Solium.*

There are a few general observations which it may be useful to mention, previous to entering on the more detailed account of cases and remarks. The disease was not confined to any particular class or rank in society; intestinal worms, of one or other species, attacked as well those enjoying every possible comfort, as those exposed to all privations; they spared neither the young nor old, temperate nor debauched, male nor female.

Of the troops employed on the eastern bank of the great Fish River, the proportion of those who became affected with worms, to those who escaped this troublesome complaint, appeared to me about two to five; the *ratio* of those who remained in the colony differed from the preceding, and probably did not exceed one to four. The *Tænia Solium* and other worms, more especially *Ascarides lumbricoides*, appeared, *for the first time*, in most of the individuals attacked; they were almost all, without exception, healthy young men, accustomed to much exercise, constant discipline, and regular habits. The greater number of the individuals affected could not remember ever having passed worms, even from their earliest infancy to the period of their attack in 1819. Intestinal worms were passed at this time by men who had lived several years in the colony, and who had not previously been afflicted with them. In one case the gentleman had been *nine* years in the colony before the attack of the disease.

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* Sparrman's Travels, Vol. II. p. 127.

Cases and Observations.

CASE I.—Of a detachment consisting of about 86 men, 38 were found, on inquiry, to be affected with worms; of this number, two had the *Ascarides lumbricoides*, and the remainder *Tænia Solium*. The detachment was composed of young healthy men, previous to the appearance of the worms. Those affected became, generally speaking, emaciated and weak, low-spirited, pale, and unhealthy. They laboured under other symptoms, which will be more particularly described in a future case. The cure of all who chose to adopt the means was easily effected by small doses of the spirits of turpentine, after the failure of purgatives and various other remedies.

CASE II.—One of the above mentioned detachment, whose name I think was *Gardiner*, had resorted to a variety of methods in order to rid himself of so troublesome a complaint, but ineffectually. He had restricted himself entirely to a milk diet for about three weeks, with the effect of arresting the growth of the *tænia*, as few or none of the detached joints appeared in his stools during the continuance of this regimen; they reappeared immediately on his returning to the use of animal food. The spirits of turpentine were prescribed for him, in the dose of two drachms morning and evening. He, almost immediately after, voided by stool a portion of a *tænia*, consisting of about 240 distinct joints, each about ⅜ of an inch in length; the unpleasant harassing symptoms which generally accompany the presence of *tænia* in the human body immediately left him, and did not return.

CASE III.—A middle-aged man (a half-pay officer) had been affected with *tænia* for eight years, during which long period, an incredible quantity of drugs had been prescribed for the complaint, and taken without any permanent advantage. He had been under the care of several medical men, and his constitution was greatly impaired. During these eight years, he had been in the constant habit of passing detached joints of the *Tænia Solium* by stool, in great quantities, and his existence had become, in consequence of this and other complaints, truly miserable. Two drachms of spirits of turpentine in a little water were taken twice a day, for four successive days. He now passed the *tænia* in large connected masses; the symptoms of disease disappeared, and his health returned.

CASE IV.—In this case, (also an officer,) the *tænia* appeared suddenly, whilst the individual enjoyed perfect health. He had never passed any worms previous to the present attack. The symptoms, as in most others, were acute headache, dyspnœa, fetid breath, grinding of the teeth, constant itching of the nostrils, stiffness of the lower jaw, sensation of pain in the temporal muscles, increased flow of saliva, sickness and pain of stomach, pains in the chest and bowels, slight tenesmus, paleness, general debility, emaciation. The complaint was observed to be much aggravated by the use of animal food, and a vegetable diet was found effectual in repressing the growth of the *tænia*, but did not succeed in removing the disease. A powerful dose of jalap and calomel was prescribed, with the view of expelling, at least, the detached joints of the *tænia*, if not the worm itself. It proved useless in either way, for it neither expelled the worm entire, nor any of its detached joints. The cure was finally effected by the spirits of turpentine.

It would be tedious to enumerate more of the cases which occurred, as they bear to each other so close a resemblance; but there are circumstances regarding the action of the remedy employed, and the exciting cause of the complaint, which merit minute discussion.

It has been generally allowed by medical writers, that there is scarcely any part of medical science more obscure than the origin of intestinal worms. The works of the ancients contain no accurate observations on this interesting point, and the labours of later authors tended only for some time to involve the subject more and more in obscurity and error. Much was to be expected from the exertions of the natural historian, and from the aid of the microscope in the hands of men of science, accustomed to habits of correct observation, and to the impartial investigation of nature. This class of men *has* done much towards elucidating the nature of intestinal worms, or, speaking more generally, of *entozoa*, the name by which worms living within other animal bodies are distinguished. But great difficulties remain to be overcome, and the opinions maintained by the most accurate writer on this subject, (Rudolphi,) appear to me quite untenable.

A simple enumeration of the various causes which have been assigned for the production of intestinal and other worms, would convince an impartial reader, that such were inadequate to produce the effect, and were supported by men, who did not give credit to their own doctrines. The extreme difficulty attending such investigations will be made manifest by remarking, that the so justly celebrated Linné entertained notions regarding the origin, habits, and growth of *tænia*, which Pallas and Rudolphi have since proved to be entirely erroneous. It is unnecessary here to discuss the opinions of a host of writers so ably combated and refuted by these authors. It seems preferable rather to inquire into the causes which gave rise to intestinal worms, in so great a number of otherwise healthy individuals,—an inquiry fraught with interest to the medical practitioner; since next to the removing disease when present, the most important subject for investigation is its exciting cause.

The best authors have remarked, that, for the production of intestinal worms, a certain predisposition of the body is necessary, which foreign writers call a "*diathesis verminosa*," and sometimes a "*dispositio verminosa corporis.*" This they describe as originating in scanty, unwholesome vegetable diet, and hence the frequency of intestinal worms amongst the poor; but they also assert, that debility, from whatever cause arising, may give origin to the same complaints. In confirmation of these opinions, they remark, that the inhabitants of low marshy countries, as Holland, are more subject than others to intestinal worms. All preceding theories having been disproved by minute microscopical inquiry, naturalists have admitted the preceding statements, and explained the generation of worms in the human body, by a process totally dissimilar to what is known to take place in the production of all other animals, and somewhat resembling the growth of mushrooms, from a *compost* employed for that express purpose. Nor do the careful expressions of Rudolphi diminish the difficulty, or explain away the absurdities attending the admission of such an *hypothesis.* "Organic particles," he observes, "are required for the production of *entozoa,* in the same manner as we find the classes of animals called *infusoria,* and *phytozoa,* and some *fungi,* are produced." In parts, he further observes, which have been organized, *(partibus organicis,)* as well animal as vegetable, and which have been macerated in water for some time, innumerable animalcules called *infusoria* are known to arise, and to be produced by a process not unlike putrefaction.

It is with diffidence that I offer, in opposition to the opinions of such accurate observers of nature, the following objections: Debility presents itself to the medical practitioner daily in a hundred forms, without being accompanied by intestinal or other worms. On the contrary, these appear in the strongest constitutions, particularly exemplified by the cases detailed at the commencement of these remarks. The individuals alluded to were, with few exceptions, young, healthy, active men. The climate of the Cape is remarkably dry, forming, as it were, the counterpart of Holland, and Hasselquist* says of Egypt, that the inhabitants are much afflicted with *tape-worm*, a practitioner in Cairo assuring him, that two-thirds of the inhabitants of that city were afflicted with them. Moisture, therefore, can have little effect in the production of *tænia.* Neither can a vegetable diet be blamed for its production, since many months had elapsed during which vegetables, bread excepted, formed no part of the diet of any of the individuals alluded to in the preceding cases.

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* Hasselquist's Voyages and Travels, p. 386.

As *tæniæ* and other worms are occasionally found in fish, some writers have asserted that they are thus transferred to the human frame. The observations of naturalists have shown, that the *tæniæ* observed in fish and man differ essentially; and in addition, it may be remarked, that of the hundreds whom I have known to be affected with *tænia*, none had tasted fish for the period of at least six months previous to the appearance of the worms, and many not for years. It remains, therefore, to be explained, how so many young, healthy, active men, became suddenly affected with *tænia*, for assuredly no theory hitherto offered on the subject of intestinal worms throws any light on their origin in the present instance. From the disturbance worms generally create in the human frame, we should be inclined to adopt the conclusion, very different from that of preceding writers, and forming almost an exact counterpart, viz. "That intestinal worms are not natural to man." This opinion is confirmed by the constant efforts nature makes to throw off the disease,—efforts more or less obvious in different individuals, but perhaps existing in all. The *Filaria medinensis* has been classed with the *entozoa*, though several writers allow that it naturally exists in the wells and rivers of warm countries.

Intestinal worms are introduced into the human frame mixed with the food or drink, and, finding in the intestines an apt place for their existence, they there live and thrive; but they do not arise from a weak and injured digestion, and a consequent combination of matter capable of converting itself into intestinal worms. * Were we satisfied with such explanations, the origin of man, and all other animals, would be readily accounted for, from "a peculiar arrangement and combination of organic molecules placed under peculiar circumstances;" the story of the serpent *Python* would be no longer a fable.

Perhaps the strongest objection hitherto offered to the opinion, that *entozoa* are not generated within the bodies of man and other animals, but are transferred to them through the medium of the *ingesta*, arises from the fact, well ascertained, that intestinal and other worms have no where been found excepting within the *viscera* of other animals. But to this it may be observed, that the repeated errors committed by microscopical observers have brought this mode of observing natural phenomena into a certain degree of disrepute. The indefinite nature of the theory supported by late writers, that *entozoa* are generated within the *viscera* of man by a process our food undergoes when not properly digested, has retarded the advancement of knowledge relative to these animals. It has done worse: it has prevented minute inquiry into the immediate exciting cause of intestinal worms, into the particular article of food which more immediately produces them; and it has spread widely a few vague notions, that unwholesome coarse food, whether animal or vegetable, when introduced into a weakened stomach, will at all times give rise to the disease of worms. It seems of importance, therefore, to reduce the subject to a few determinate points, and, by subjecting the inquiry to a stricter analysis, enable succeeding observers readily to prove or confute the existing theory.

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* "Dissimilatio vermes gignit.

"Vermes ex dissimilationis processu in corpore animali debilitato obtinente oriri statuit." RUDOLPHI.

It may, I think, be admitted, that intestinal worms (or the matter capable of producing them) can be introduced into the *viscera* of man and other animals only with the food or drink. That they do not arise from the latter, may be conjectured from the following fact, that individuals using, for a series of years, water drawn from the same sources, have not been afflicted with *tænia* or other worms; nor did these appear until other causes, to which, with more probability, they might be referred, were also present.

The cases of *tænia* detailed in the commencement of this paper, occurred in a body of active healthy young men, subjected to the same discipline and privations, and using, with few or no exceptions, the same sort of food and drink. These circumstances merit peculiarly the notice of the professional reader, as it seldom happens that an experiment (for such it seems to me) can be made so extensively in civil life, where the habits of no two individuals resemble each other,—where the food and exercise of the sick are submitted to no precise rules,—and the dissimilarity in age, constitution, and previous habits of life, renders all general conclusions necessarily incorrect.

In men so situated, we must look to some general exciting cause of disease, the explanations hitherto offered of individual cases being totally inapplicable. The food of these men (for to it we must ultimately refer the disease) consisted chiefly of unwholesome meat, the flesh of overdriven, starved, and unhealthy oxen, reduced often to a mere skeleton, by fatigue, want of food, and exposure to the cold rains, which are observed to sicken and destroy most of the horned cattle and sheep which have not preserved their condition throughout the winter. The use of this sort of food, from peculiar circumstances, was unavoidable. I shall not here dispute the point, whether the *tæniæ* were transferred, as completely formed animals, from the unwholesome and *diseased* meat, to the stomach and intestines of man, or are there generated; it is sufficient to have established the point, that they arise from the use of unwholesome animal food,—from the flesh of animals which have been diseased.

I have avoided, as much as possible, detailing any minute facts regarding the natural history of *tænia*, and other intestinal worms, supposing most practitioners in medicine to be acquainted with the leading *phenomena* of these animals. The following brief remarks I therefore submit to the naturalist, and claim his indulgence for any trifling error which may occur.

Various ridiculous opinions were formerly entertained regarding that variety of *tænia* called *Solium*, most of which have been successfully combated by the ingenious and accurate Rudolphi. It is now known that four individuals of the species *Tænia Solium* have been discharged by the same patient; hence the obvious impropriety of the name. The theory formerly upheld, regarding the indefinite growth of joints to supply the place of those detached from the body of the *tænia*, and passed by stool, has been rendered exceedingly doubtful. The *Tænia Solium* seems to be regenerated rather by an evolution of joints already existing, or by the production of new joints near that extremity of the worm where naturalists have proved the head to be placed. It is probable, therefore, that Rudolphi may be correct, when he states, that the joints of the *Tænia Solium* do not increase in number, but in length; or we may assent to the opinion of Pallas, who seems to think that there may be a reproduction of joints towards the head extremity of the animal.[*]

It is no longer disputed by naturalists, that in the small perfect *Tænia Solium* there are constantly found a distinct head and tail joint, which is not perforated by any vessel or tube; but as the animal, when suffered to come to maturity, secrete joints in great numbers, which pass off with the *fæces*, it is obvious, should the observations of naturalists be correct, that the tail joint must *first* be detached, and unless regenerated at a future period, ought never afterwards to be found in the animal. This difficulty has been slightly touched on by preceding writers. It seems to prove that the longevity of the animal is considerable, and that its original habits must have become altered by residing in the human intestines, for the secretion of the tail joint can hardly be considered as a natural process. A change of localities is observed to exert a certain though limited influence even over man and the class *mammalia*; but over animals of obscure vitality, and over the vegetable world, (to which *entozoa* bear close resemblance,) the power of external agents knows no limits. By a change in their place of abode, by the slightest change of climate, or culture, they not unfrequently become so remarkably different from their original or parent stock, as with difficulty to be recognised. Hence it probably happens that the *tænia* has never been detected but in the intestines of man and other animals.

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[*] It is a remarkable fact, that no well authenticated case exists of worms being found in the intestines of the fœtus or infant at the breast.

Intestinal worms infest graminivorous quadrupeds, and particularly the horse. They appear generally during winter, and quit him as soon as he is permitted to regain his flesh and strength on the spring pastures.* The presence of worms in the intestinal canal of man may be suspected when a few of the symptoms already enumerated are present; nor ought the practitioner to doubt the correctness of his diagnostic, on finding that a few doses of a purgative medicine do not bring off worms by stool. The *Tænia Solium* will betray its presence in the intestines by the separation and discharge of distinct joints. When other varieties of *tænia* are suspected, the patient ought to have recourse to *anthelmintics.* The *dyspnœa* occasioned by the *Tænia Solium* is a remarkable symptom, and may in some cases lead to an early detection of the complaint; but the superabundant secretion of *saliva* is connected with many disorders of the frame, and cannot be deemed a test either of the presence of worms, or of the recent use of mercury, but rather as a symptom of general bad health.

A variety of drugs and *methods* have been recommended for the expulsion of *tæniæ* and other *entozoa* from the intestines of man; these may be reduced to three heads.

1*st*, Mechanical remedies, as *pulvis stanni*; large doses of *aloes* taken in the form of pill, (which have been known to expel *tæniæ* from the intestines,) probably act in the same way. This method sometimes succeeds, but is exceedingly uncertain.

2*dly*, Drastic purgative medicines which occasionally are found successful in expelling the *tænia*, but whose operation is attended with disagreeable symptoms, and not unfrequently irreparable injury to the constitution. Milder purgatives are often exhibited, preceded by *bitters* and *aromatics.*

3*dly*, *Anthelmintics* or drugs which destroy intestinal worms, by being inimical to their vitality. Of these the most efficacious is *spirits of turpentine*, given either alone, or compounded with empyreumatic animal oil, as in the celebrated preparation of Chabert. I have generally found, that from one or two drachms of ol. terebinth. given in a little water, morning and evening, for three successive days, were sufficient to destroy the *Tænia Solium*,) even in the most obstinate cases,) and cause it to leave the intestines without the aid of any purgative medicine. The practice, however, of exhibiting a little castor oil about noon of each day, is unobjectionable, and may be useful, as the turpentine never purges the patients. The narcotic effects produced by turpentine on *tæniæ* and other worms may be judged of by the fact, (ascertained by several experiments,) that when one drachm only has been taken, and the patient has declined continuing its use, an immediate stop is put to the secretion of separate joints by the *tænia;* the vigour of the worm is destroyed; it sickens, and in proportion to its unhealthy state, does the patient regain his health and strength. Should the turpentine not be repeated, the worm recovers slowly, and after the lapse of an uncertain period, (two or three weeks,) the usual secretion of joints recommences. A large dose of spirits of turpentine, (from four to eight drachms,) produced in many patients unpleasant symptoms, such as intense headache, vertigo, and a confusion of ideas, amounting to temporary delirium. Neither wine nor spirits should be drank during the use of turpentine, lest strangury be produced. Food ought to be avoided on the mornings of using the medicine, nor should any be taken in the evening. The turpentine has been found most rapid in its effects, when taken about 8 or 9 A. M.

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* When young sweet grass cannot be obtained, the worms are generally expelled by a dose or two of melted fat, taken from the tail of the Cape sheep.

Oil of turpentine has been used with success in cases of *tænia* on the Continent, and more particularly in Germany, for at least fifty years. To it the celebrated preparation of Chabert owes its remarkable efficacy. *Ascarides vermiculares* are easily expelled by the same drug; and it is probable that no intestinal worm will remain in the intestines, if the system be kept under the influence of oil of turpentine for a few days.

Many alarming symptoms have been known to arise from the presence of worms in the intestinal canal, particularly nervous disorders, as epilepsy and convulsions. It is not improbable that *chorea* may often depend on the presence of worms in the intestines, and its removal by the continued use of purgative medicines would seem to confirm this conjecture. I have seen a high degree of nervousness existing in many patients affected with worms, and have found that this nervous state disappeared with the removal of the exciting cause.

March 16, 1821.

VIII.

Case of Traumatic Tetanus, successfully Treated by Amputation. By John Wayte, Esq. Surgeon, Calne.

Robert Tilling, eight years of age, of quick intellect, whilst playing around a lime-kiln on the 18th of April 1818, was affected with insensibility from some unknown cause, and fell beside the kiln in such a manner, that his right hand was forced into the burning lime. Not having seen the case at first, I am unacquainted with the early symptoms; but a week after the accident, when placed under my care, I found the second and third phalanges of all the fingers, as well as the second bone of the thumb, burnt to blackness, and nearly thrown off; with an extent of slough which threatened to deprive a part of the hand on each side of its integument. The separating process advancing rapidly, the first phalanges were soon denuded of periosteum to half their length, around which healthy granulations were produced, but presenting a surface so extensive and irritable, that even the mildest dressings, applied with the greatest tenderness, occasioned great pain. Although from this extreme sensibility, as well as from the mobility of the exposed bones, the latter could not readily be sawed off, it was my intention to have attempted their removal, when the occurrence of worse symptoms arrested my attention. I now observed the boy's countenance to be peculiarly pallid, and indicative of distress; the eyebrows corrugated, and the features shrunk, with a pulse much increased in frequency. On requesting him to show me his tongue, I discovered that he was unable to separate the jaws wider than just to protrude its apex; there were also rigors, and slight spasmodic catchings of the body. On the following morning a striking correspondence was observable between the constitutional symptoms and local appearances. The granulations wore an unhealthy aspect, being soft, glossy, and somewhat livid, yielding a sanious discharge and an offensive fetor. The tumefaction was increased, and the sensibility exquisite; the stiffness of the jaw and spasmodic twitches had become complete trismus and opisthotonos. Not a thing could be inserted between the teeth, and I could raise him from the horizontal to the erect posture without the slightest flexibility. He was perfectly sensible; but on removing the dressings, although done with the nicest caution, he was liable to be thrown into the most violent universal spasm, attended with profuse perspiration, and a discharge of viscid saliva from the mouth. On these occasions, his occiput and heels were the only points in contact with the bed, whilst his elevated abdomen, notwithstanding the contracted state of its muscles, described a considerable arch. At the commencement of each paroxysm, he invariably expressed acute pain of belly, which I attributed to the distention of the recti abdominis in a state of spasm, by the overpowering action of the extensors of the back. With these symptoms it required little penetration to perceive that death must soon ensue, unless the chief exciting cause (that is, the injured part) was speedily removed; and even from this plan, in so severe and strongly established a case of tetanus, little success was to be expected, according to the prevailing opinion.

This course, however, I determined to pursue, and, accordingly, on the 30th of the same month, at the interval of twelve days from the accident, and of two from the approach of tetanic symptoms, I amputated his hand at the wrist. From that moment the process of recovery may be dated; for although no instantaneous good effect was evident, or looked for, yet the symptoms soon began to diminish in severity, and the efforts of nature, being relieved from an overwhelming obstacle, proceeded without interruption until the cure was accomplished. It is remarkable, however, that, in the early periods after amputation, he was thrown into spasmodic paroxysms at each dressing, and would be frequently awoke by them during the night; at which times the spasms were observed to be more quickly relaxed, when, by firmly clasping his mother's neck with the sound arm, he endeavoured to bend himself forwards. These paroxysms continued upon him some time longer, at more distant intervals, and with diminished severity. But, on the 30th of May, the stump was completely healed, and, by the 5th of the following June, he was enabled to pursue his usual amusements with his play-mates. I afterwards learnt that his appetite was good, that all muscular action was perfect, and that he never experienced any return of spasm.

Observations.—Tetanus, in all its forms, is a disease so distressing, both to patients and their medical attendants,—the former being usually conscious of its nature and tendency, and the latter too well aware of the inefficacy of human means for its relief,—that I trust a few observations upon the subject in general, and more especially upon the case above related, will not be deemed altogether superfluous. The ordinary distinction into idiopathic and traumatic tetanus, although not suggested by any obvious difference in symptoms, seems a very proper one; and it will probably hereafter be found, that the scientific treatment of the former rests on analogies drawn from the latter. Exposure to cold and wet, more particularly in a hot climate, is almost unanimously admitted to be the principal exciting cause of the idiopathic form. But with respect to the traumatic tetanus much diversity of sentiment prevails, some supposing that it arises from wounded nerves, others from wounded tendons, or, what is nearly synonymous, from tendinous sheaths. This question should, if possible, be satisfactorily decided, in order that a suitable and consistent practice may be adopted. Now, *a priori*, it seems reasonable to expect, that those parts which are naturally the most sensible should exhibit the greatest increase of sensibility under inflammation, and communicate the highest irritation to the system, and this is found in fact to be the case. Nerves, again, are the universal media of sensation, whilst tendons have little or no feeling in the healthy state, and not much, I am inclined to think, when inflamed. The exquisite pain experienced when matter is collected under the theca of a finger, seems rather to arise from confined pressure on the highly sensitive surrounding parts, than from inflammation of the theca itself; for almost immediately on making a free incision through it, and affording an outlet to the pus, the pain ceases,—surrounding inflammation subsides,—and recovery ensues. Such, also, is often the case with matter collected under the tendinous aponeurosis of the arm or thigh, with this difference, however, that, as it is more readily diffused, the pain is usually less acute, depending not so much on the quantity of pus as on the closeness of its confinement. Thus, also, we see exposed tendons bearing the knife, without evincing sensibility, and the largest tendon on the body, the tendo-Achillis, as well as its aponeurotic attachment to the gastrocnemius muscle, lacerated without exciting much disturbance in the constitution. On the other hand, we find traumatic tetanus generally arising from wounds in the hands or feet, where nerves abound and sensibility is exquisite, and occasionally from apparently slight injuries of parts having nerves, though wholly unconnected with tendons. In the case before us, it will be observed, that, prior to the occurrence of any tetanic symptoms, the sloughing process had rapidly proceeded, and had separated ligaments, tendons, and integument, so as to leave a healthy granulating surface, surrounding, and partly covering the half denuded phalanges. Had any experienced practitioner witnessed the condition of parts, their extreme sensibility, and how instantaneously and violently the whole body was agitated upon the nicest application of dressings, I have little doubt but that he would readily have referred both the pain and spasm to highly irritated nervous papillæ, and not to injured tendons. It was with such an impression, and from a conviction that the natural powers of recovery were struggling with an obstacle which they could not overcome, that I amputated the hand at the wrist; and, although no other remedies were employed, except one anodyne draught before the appearance of tetanus, and an occasional mild purge, the operation was attended with the happiest results. Without meaning to build too far on a rare and insulated case, I am, however, disposed to conclude,

1st, That all irritations in laying open of wounds, or by making partial excisions, should be avoided in traumatic tetanus.

2d, That, on account of the peculiar abundance and sensibility of the nerves supplying the papillæ of the palm of the hand and sole of the foot, and the readiness with which impressions of all kinds are propagated amongst them, I should never be satisfied by the amputation of a finger or toe, but should recommend the removal of foot or hand, however insignificant the wound might be.

3d, That, in idiopathic tetanus, on a similar principle, the object should be to allay the undue excitement of the nervous system, by the use of various narcotics in different modes, either in combination or in succession, at the same time to attend closely to keep the bowels in a soluble state.

IX.

Case of Polypus, successfully removed by Operation from the Antrum Maxillare. By ROBERT LISTON, Surgeon, Lecturer on Anatomy and Surgery, &c. &c. communicated to Dr DUNCAN Junior.

DEAR SIR,

I NOW perform my promise of drawing up for your valuable Journal an account of the case of polypus of the maxillary antrum, in which you expressed yourself so much interested, when you had the goodness to examine the patient during the progress of the cure.

About fourteen months ago, R. B., a stout and healthy middle-aged man, was seized with most violent headaches, which were by and bye followed by a feeling as if the bones of the head and face were about to be torn asunder. The pains were so excruciating at that period, and indeed continued so till the time of the operation to be detailed, as almost completely to deprive him of rest during the night, and prevent him from following his occupation during the day. These symptoms were speedily followed by stuffing in the right nostril, and the appearance of a tumour in the cavity. The poor man, worn out by the suffering and discharge attendant on the disease, applied for assistance at the Royal Infirmary, where he lay in inexpressible agony for three weeks, with an immense tumour projecting from the nostril over the upper lip, during his sleep threatening suffocation, occasionally bleeding, and at all times affording a profuse and fetid discharge. At last the protrusion was removed, and the patient dismissed. When I saw him, immediately after, I was led to suspect, from the tenderness of the gums, and pain experienced on pressing the teeth of the right superior maxilla, though there was no very perceptible enlargement of that cheek, that the mischief had its origin in the antrum. I, however, cleaned the nostrils by means of the knife and small crochet, (for both were crammed with solid tumours,) and traced the disease through the maxillary plate of the right nostril. The patient, though much relieved in all respects by this comparatively complete operation, was soon brought into the same state by the renewal of the growth. No hope could now be held out of a permanent cure, unless the antrum were opened, and the disease extirpated from its root. Accordingly, by one stroke of a straight-edged bistoury, the upper lip was divided, and, by a little dissection, the thin anterior part of the maxillary bone exposed. The tumour was found to project a little at this point. A pretty large trephine was applied wide of this projection, and the bridge betwixt the two openings broken down with cutting forceps, so as to give room for the free introduction of the finger and knife. The antrum thus exposed was cleared of the numerous hard tumours with which it was completely crammed, and which adhered principally to the outer side of the cavity, by means of small curved convex and concave probe bistouries. The walls of the sinus had been absorbed both before, behind, and towards the nose; allowing the tumours to project under the integuments of the cheek, into both nostrils, through the septum, and behind the soft palate into the top of the pharynx. The operation was finished speedily, and the cavity, which was immensely distended, filled immediately with lint, so that the patient lost very little blood. The masses removed filled a pretty large breakfast cup, and weighed nearly three ounces. At two different periods the parietes of the antrum were touched freely with the actual cautery, more especially towards the outer side. The opening in the cheek was preserved for nearly six weeks, so as to allow of lint, steeped in tincture of myrrh and laudanum, to be daily introduced. When the whole parietes appeared perfectly healthy, the edges of the lip were made raw, and brought together so as to leave very little deformity. Some small portions of polypus appeared in the nostrils after the operation, but were extracted, and apparently eradicated, by the use of the lunar caustic conveyed on a bougie.

I am induced to offer this case for publication; no one, as far as I know, having appeared since that of Desault. I am aware that two attempts were made by a late celebrated surgeon of this city to remove tumours from the antrum, but in both but a very trifling portion of the disease was extirpated. One of them was rather unfavourable, the disease having extended through the floor of the orbit. In the first one, an attempt was made to open the cavity, by merely raising the lip and perforating above the gum. In the other an incision was made in the fold of the cheek, but without dividing the lip. In neither could a sufficient opening in the bone be procured. In these cases ineffectual attempts were afterwards made with lunar caustic to destroy the disease. The patients lived but a very short time, and the preparations demonstrate forcibly the futility and inefficacy of such half measures. By the employment of the actual cautery in this and other cases, I am sensible that I expose myself to the charge of recurring to a practice of the older surgery, which has been abandoned in this country at least, as cruel and barbarous. The substitution of the potential cautery, however, in many circumstances, I make bold to assert, is not an improvement in surgery. Most caustics produce more pain, and are much less effectual than that which has been given up. One application of the actual cautery is more effectual than ten applications of the potential, and that one is less painful than any one of the ten. The pain of the actual cautery is momentary, that of the potential fully as great, and continues after the application, sometimes for days. These assertions I make after considerable experience, and in some remarkable instances I have the testimony of patients who experienced both pretty extensively. The actual cautery, however, is not a remedy which I would recommend, except in desperate circumstances. In affections of the bones it is well known that the cautery is freely used by the surgeons on the Continent. But it may also be used in affections of the joints under particular circumstances with great advantage.

I will take an opportunity of presenting cases, in which, by this and other means, limbs have been saved and rendered serviceable, even though the joints were very extensively diseased. To the aphorism of Hippocrates, I completely subscribe,

"Quæ medicamenta non sanant ferrum sanat, quæ ferrum non sanat ignis sanat, et quæ ignis non sanat insanabilia."

Edinburgh, May 18, 1821.

X.

Case of Pneumonia, with Observations. By JAMES KIND, Surgeon, Camilton.

It is generally a matter of little or no difficulty to distinguish pneumonia from every other complaint; still cases do occur, and that not unfrequently, where, from the great variety of symptoms, considerable difficulty is experienced in forming a correct diagnosis. It is true, indeed, that where the symptoms are severe and well marked, little doubt can be entertained of the existence and real nature of the complaint; but where, on the other hand, they are of less severity, and when then accompanied with other symptoms, equally prominent, indicative of a different disease, the utmost attention and diligence will be requisite to form a correct notion of the complaint. Where, for instance, along with slight symptoms of inflammation in the chest, we have others of greater severity, indicating a derangement of the digestive organs, while both sets of symptoms are of the same continuance, or nearly so, it will be often difficult to mark with accuracy the primary disease, or to discover whether they may not be altogether independent of each other.

The following case commenced with symptoms highly indicative of derangement of the digestive organs, which were soon followed by others, marking in an equal degree inflammation of the lungs. These last (so far as we could judge from appearances) were soon overcome by a strict adherence to the antiphlogistic regimen: while the former (those characteristic of derangement of the digestive organs) continued to harass the patient till death put an end to his sufferings. Dissection, however, showed that the affection of the digestive organs was so trifling as to require little or no attention, while the complaint in his breast, though far from being well marked, was the great cause of all his sufferings.

On Monday, the 22d July 1820, was sent for to visit A. R. a tall meagre man of 34 years of age. His constitution appeared to be much worn out and debilitated. The countenance was pale and anxious; his eyes languid and heavy, and seemed as if sunk in their sockets.

His complaint commenced about four days ago, with considerable debility and great aversion to exercise, with pain in the right hypochondriac region, shooting up on the same side to the shoulder and clavicle. Since that time the pain has continued to increase, and is now severe, not more so, however, in taking a full inspiration. Free from pain; skin moist, and heat natural; bowels rather slow; tongue foul, and covered with a dark-coloured crust. The following is the account he gave me of his complaint previous to the time I first saw him.

He was a soldier early in life, and as such he served five years in a tropical climate, where he was discharged ten years ago, being unable for duty, owing to a complaint he then laboured under, supposed to be an affection of the liver, and as such it was afterwards successfully treated by the usual practice. About five years after his return from India he was again attacked in a similar manner, and again the same mode of cure proved effectual. From that time up to the 22d July last, he enjoyed better health than he had done for years before.

From this account, and from a consideration of the symptoms already mentioned, I considered it to be a derangement of the digestive organs, particularly of the liver, though no external swelling was perceptible below the margin of the spurious costae. I prescribed a dose of salts, but these not operating, a purgative of grs. viii. of calomel, with a ℈i. of the comp. powder of jalap, was given him soon after, and a blister applied to the part affected. In the evening an emetic was given, at his own request, which operated well, evacuating the stomach of a bitter fluid, in every respect like bile. From this, and from the sickness at stomach, and pain of right hypochondriac region continuing, it was reasonable to suppose that the liver was affected, and that, in all probability, it was a fresh attack of his former complaint. As mercury, from his own account, had been of so manifest advantage in the two former attacks, and as no symptom was present to contraindicate its use, I thought it the most advisable treatment to begin again with the calomel, (the preparation formerly found of service,) giving grs. iii. every four hours.

The pain continued to be felt in the hypochondriac region in defiance of the blister and exhibition of the calomel, till the evening of the 26th, when, about nine o'clock, it shifted to the situation of the third rib on the same side. Breathing became oppressed; heat increased; skin harsh, and dry to the touch; pulse 108, and strong; bowels still slow, unless when kept open by physic. Tongue foul, and breath particularly fetid. As the pain in the chest, together with the cough and inflammatory nature of the pulse, indicated the presence of inflammation, it was thought proper to have recourse to blood-letting. Blood was accordingly extracted to the extent of ℥xx., from which he seemed to derive great relief. The blood formed into a firm coagulum, but no buff was exhibited.

The following is the report taken at my visit the next day: "Pain continues to be felt in the chest, but breathing is performed with more ease. Has at present a short hollow cough, at which time he feels pain in the right side, below the margin of the false ribs, which stretches up to the clavicle of the same side. Vomited yesterday a thin yellow fluid of a sour taste. Pulse more moderate in frequency, and not so full. Heat of skin abated. No alvine discharge. Tongue continues foul."

As the detraction of blood had been so serviceable at last visit, I again took from the other arm ℥viii. but was deterred from any farther evacuation, owing to my patient being attacked by frequent fits of fainting, and the extreme debility of his constitution, which was much shattered by his residence abroad. The calomel pills were ordered to be continued, and salts to be given till the bowels were freely opened. This morning his sufferings were certainly rather abated; in the evening, however, a very troublesome cough supervened, attended with pain in the right hypochondrium, and in the situation of the scapula.

On the following morning, at my visit, the breathing was short and anxious; pulse frequent and strong; tongue still foul and breath fetid. Blood was again extracted, in the horizontal position, to the extent of twenty ounces, and when allowed to cool it exhibited the buffy coat. Returning in the evening, the following is the report: "Feels easier; has had no cough to-day; pulse less frequent and soft; heat of skin abated; pain, however, continues to be felt in the situation of the liver, on taking a full inspiration. Another blister was ordered to be applied to the part affected. This was at five o'clock. I called again at eight, resolved to persist in the bleeding, if the symptoms indicated. But I found him easy; pulse soft and full; skin moist, and heat at natural standard."

The report on the following morning is very favourable. "Blister has risen well; salts have operated four or five times; has had no cough; pulse calm; seems much better." My patient was, however, far from being well. There was total want of appetite; foul tongue, with occasional sickness at stomach. The exhibition of the calomel was persisted in till the 3d of the month. He had then used it eight days, and yet not the least perceptible influence could be observed on the constitution.

On the 4th (the following day) the report is, "Pain of right shoulder continues; is occasionally troubled with cough; and then a slight pain is felt between the 5th and 6th ribs of the same side. Expectoration copious; has had three motions during the night; tongue covered with a dark dry crust; pulse soft, and skin pretty cool."

The pills were this day ordered to be omitted, as they had not as yet produced any effect on the gums, and as we might, by persisting in their use, increase that complaint, if only an affection of the lungs existed. Pills ex pulv. scillæ grs. ij. submur. hydrg. gr. i. op. gr. ss. were ordered in place of the calomel. During the whole of that night the cough continued very troublesome; but as morning approached it abated.

On the 5th the pill. ex scilla were continued, but no alteration was experienced. The tongue continued crusted, and the appetite gone. Again, the opinion that the chylopoetic viscera were deranged recurred, and it was resolved to have again recourse to the calomel conjoined with purgatives.

On the following day a sense of weight was felt in the right side, not increased by taking a full inspiration. The lungs were therefore supposed not to be the primary affection, but that there existed an enlargement of the liver, although it could not be felt below the margin of the ribs.

On the 7th severe pain was felt in the right hypochondriac region, below the margin of the spurious costæ, and the consequence of this was, that the calomel was the more strictly adhered to. The cough continued to distress the miserable sufferer, and during the paroxysms he was troubled with severe and repeated attacks of vomiting.

On the 10th the pain of the right hypochondrium still continued to be much complained of, for which frictions, with mercurial ointment, were prescribed. On the 11th, at my visit, I was told that he had passed a good night, and that the pain was much easier. In the evening, however, the following is the report: "About 11 A. M., felt a sensation of something bursting in the chest. By cough has expectorated a very considerable quantity of yellow matter of a fetid smell; has no pain in any situation; tongue still covered with a dark crust; pulse 85, soft and full." A draught, containing a ʒi. of paregoric elixir, was given in the evening, after which he felt easier.

On the 12th the stomach became very irritable, rendering it almost impossible to prevent even the most gentle nourishment from being vomited as soon as taken. His temples were bedewed with moisture, and felt warm, while the other parts of his body continued cold. Tongue now became cleaner on the edges. Pulse regular, and soft.

On the 13th the calomel pills were omitted. They had as yet produced no effect on the constitution, nor had they any influence in moving the bowels. Matter was copiously expectorated. Ammoniac mixtures, with tincture of opium, squill mixtures, with paregoric elixir, and squill pills, had little or no influence in alleviating the distressing cough. On the 19th, in addition to his other sufferings, pain was felt in the left hypochondriac region, supposed to arise, in part at least, from the severe coughing. Camphorated mercurial ointment was rubbed into the part, which he thought of benefit. On the 22d, at 1 o'clock, P. M. death put an end to his sufferings.

The body was opened on the second day after his death, when the following morbid appearances were observed:

The lungs on the left side appeared perfectly healthy; the right, however, adhered along the side of the sternum, and also to the pericardium and superior part of the diaphragm. On separating the adhesions from the sternum, about 4 lbs. of purulent matter were observed between the lungs and the pleura costalis. The pleura was covered with a thin layer of coagulable lymph, which was easily removed, and found to be very vascular; and on its removal, the pleura itself was found to be more than naturally so. The lung floated in the matter; its superior lobe appeared to retain its natural structure, while the inferior parts were firm, and when cut into, matter was squeezed from the cells. The liver was considerably enlarged, and was found adhering to the peritonæum. The spleen was found adhering to the diaphragm, and to the stomach, which was very much distended, and contained upwards of a pound and a half of dark fetid fluid. The coats of the stomach appeared much thicker than natural. The duodenum was very much distended. The small intestines were considerably distended, and in some parts adhesions had formed between the convolutions. The colon was in some parts considerably contracted, particularly near the sigmoid flexure.

This was certainly a complicated case. Upon dissection great disease was exposed that had scarcely ever been suspected, and which, judging from the nature and severity of the symptoms, was but little to be dreaded during life. No symptom indicating inflammation of the lungs existed before the 26th. Previously the foulness of tongue, the sickness at stomach, and vomiting of bile, indicated deranged action of the digestive organs. The inflammation then existing was, or rather appeared to be, overcome by a free use of the lancet, conformable to the urgency of the symptoms. It is to be regretted, however, that the bleeding was not carried to a greater extent. The relief derived from the first evacuation ought to have encouraged a repetition, as pain continued to be felt in taking a full inspiration. As the pulse became calmer and softer it was not repeated till the following day, when an exacerbation of the symptoms induced me again to have recourse to it, and the blood then extracted exhibited the buffy coat. Had the calomel been instantly omitted, and the case trusted to blisters and more copious evacuations, I would have had no occasion to regret the practice. The insidious nature of his complaint, however, together with an abatement of the inflammatory symptoms, and the debilitated state of his constitution, were, in my opinion, sufficient reasons for adopting the treatment already mentioned.

If it could be shown that along with inflammation of the lungs the liver was likewise diseased, would the exhibition of the calomel been admissible? Throughout the whole disease there were evident symptoms of derangement in the functions of the liver, and the adhesions seen on dissection were proof positive that inflammation had there existed. But might not these adhesions be a consequence of the violent action of vomiting? Or were they not rather the cause of the violent vomiting? The most probable way of accounting for these appearances is this: The vomiting in all probability was brought on by the convulsive fits of coughing, in consequence of the well-known sympathy that exists between the lungs and the stomach. The vomiting, thus excited, is the most probable cause of the unnatural adhesions the liver and spleen had formed. Taking what we have now stated for granted, the exhibition of the calomel was injurious, or, at all events, useless and unnecessary, as the affection of the liver, so far from being the greater part of his complaint, was but trifling, and only to be cured by the removal of the exciting cause, the severe paroxysms of coughing. That the vomiting was occasioned by the coughing is rendered the more probable, as no marks of inflammation of the stomach were observable on dissection.

There can be no doubt but that the primary complaint was pneumonia, and that the diseased state of the other organs exhibited on dissection were merely secondary and of little consequence. The abscess seems at first to have burst into the air cells of the lungs, but in the process of the cure the violent convulsive cough, rupturing the pleura pulmonalis, the matter found its way into the cavity of the thorax, forming empyema. The stomach of course sympathized, and the violent vomiting, often a consequence of pneumonia, caused the inflammation of the adjacent organs. This is a more natural way of accounting for the appearances seen on dissection, than to impute them to the improper use of calomel; for it cannot be possible that this medicine could induce inflammation in a distant organ, without exciting increased action in the alimentary canal. Had violent purging supervened after the use of the calomel and purgatives, we might have been justified in thinking that the inflammation which followed was occasioned by the use of the medicine; but in this case the bowels were never moved unless by the aid of opening medicine; and during the whole course of the complaint no symptom of inflammation of the bowels ever made its appearance.

That calomel is not always injurious in cases of pulmonic affection, the notes of a case which I have beside me, and which occurred in the practice of a friend, go directly to prove. The patient was evidently of a scrofulous constitution, and had unequivocal symptoms of phthisis. His digestive organs had been for a considerable length of time very much deranged, and different modes of cure had been tried, all of which proved ineffectual. At length, evident symptoms of inflammation of the liver supervened, for which, after proper evacuations, calomel was prescribed, and persevered in till the mouth became slightly affected, and then a speedy removal of all the symptoms was the consequence. Perhaps the cure may be attributed to nature, but taking that for granted, it still proves that calomel is not always injurious in cases of pulmonic affection.

This case is directly in proof of what Dr Hunter has somewhere stated, that two actions cannot exist at the same time, the more powerful always overcoming the weaker. When severe inflammatory action exists mercury does not produce its effects on the constitution. If we admit the truth of this observation, the reason the mouth never became affected is obvious.

8th February 1821.

XI.

Case of Abdominal Tumour, with Dissection. By Ebenezer Gairdner, M. D. Fellow of the Royal College of Physicians.

Dunfermline, Sept. 17, 1820.—Euphemia Watson, ætatis 10, is now affected with great tumefaction of the abdomen, which throughout feels excessively tense, neither fluctuating nor elastic; at the right hypochondrium particular hardness is felt, which seems to extend transversely downwards into the left ilium, where it is more distinct and hard; no pain is excited on rather a rough handling or pressure of any part of the abdominal region; countenance pale; conjunctiva natural colour; pulse 120, rather sharp; tongue rather moist; not much thirst; appetite somewhat capricious; no disposition to vomit; urinary functions natural; bowels rather slow, and kept easy only by the use of medicine, but a sensation of great oppression seems to be felt in the bowels.

About four weeks ago she had an attack of scarlatina, which was mild, and yielded to the cooling treatment, but Mr Bowes the surgeon, about two weeks thereafter, observed the belly to be very tumid, with little or no pain on pressure, and no fluctuation, and the natural constitution of the family led him to suspect that it might be an affection of the mesentery.

Some months ago, she had complained a little more than usual; she then felt a slight pain at the right hypochondrium, from a slight blow from a form at the school, to which very little attention was paid at the time.

Though pretty healthy, the child had rather a delicate constitution, and when any purgative medicine was advised to be taken, she had so great an aversion to it, that it was seldom if ever administered. Cathartics have lately been exhibited, followed by the gentle use of mercury, without affecting at all the constitution or producing any relief.

The mercury was now ordered to be intermitted, and cathartics of calomel and jalap, with the free use of clysters, also fomentations and the tepid bath, were prescribed, which brought off much fetid feces of a clay character. On the 19th the hardness was still more distinctly felt to be circumscribed, particularly at the left ilium. The cathartics and clysters continued to induce copious fetid discharges of liquid and scybalous feces, mixed with matter of a shreddy appearance, with considerable relief, as, without the frequent use of these, there was a disposition to torpidity of the bowels, with great oppression; but little or no impression was made on the tumour, though, on the 23d, the circumference of the belly measured one and a half inch less than it was on the 17th.

We again had recourse to mercury, exhibiting it principally by unction, and the oxymuriate bath, but without producing a constitutional or any of the desired effects.

The fecal discharges continued to indicate a high degree of derangement of the abdominal functions. Besides the appearances above noted, they were frequently bilious, at times tinged with blood, and at the last of a variegated and ocherey colour, generally excessively fetid; yet no pain was felt by external handling or pressure, until October 4th, when considerable tenderness and pain were experienced at the right hypochondrium, followed by some slight convulsions of the head and limbs, which soon abated. She died on the 7th. Throughout, and to the last moment, she remained quite sensible, and she seemed to be rather acute as to the intellectual functions.

October 8th.—Sectio Cadaveris.—The body shewed no external discoloration; the peritonæum could only be partially dissected, being much diseased, gangrenous in some places; on opening it at the umbilicus, there rushed out a quantity of gas, which had the odour of sulphuretted hydrogen, and we at once came into the body of an immense tumour, which was encysted or enveloped by the peritonæum and mesentery, occupying nearly the *whole anterior part* of the abdominal cavity; but its principal mass seemed more particularly to extend from the right hypochondrium downwards into the left iliac region, where it was hard and firm, of a cartilaginous and sarcomatous nature, and in the upper part there was contained much of a brown and variegated matter, somewhat liquid, like to that which had lately passed by the bowels, with masses of fungous matter. The contents of the tumour could not be well measured, but must have exceeded four pounds.

The omentum was nearly gone, and but barely to be distinguished at the left hypochondrium, of a blue colour, covering the intestines. These, from the tumour, were not visible, but at this region, they were closely compacted backwards, and they seemed in some places to communicate with, and to run into the tumour.

Excepting at the upper part, the mesentery seemed to adhere, and to communicate also with the tumour, so that we could not follow out beyond two or three convolutions of the intestines; indeed, they were agglutinated into a mass, and singularly conglomerated.

The stomach, and those few portions of the intestines which did not exhibit so great a degree of disease, were of a blanched appearance.

The liver was smaller than usual, of a pale emaciated aspect, its margin of a blue colour, but it was not hardened, nor was there any unnatural adhesion. Abdominal effusion was very trifling, but there was considerable emphysema.

The symptoms, as noted on the 17th September, indicated an abdominal induration or tumour; and, considering the peculiar diathesis and history of the patient, more particularly such a constitution being affected with scarlatina, grounded my suspicions, which were communicated to Mr Bowes at my first visits with him, that it was a marked case,—the effect of chronic peritonæal and mesenteric inflammation, lately well described and illustrated by Broussais, and noticed by Laennec and others. If we lay no great stress on any material morbid affection to have been *immediately* induced by the blow received at school, but rather consider the excitement by the scarlatina in this constitution, it illustrates, as I conceive, the metastasis of disease, and more particularly to organs that are weak and unhealthy; a doctrine, however it may be doubted by some, and even ridiculed by a few pathologists, is, nevertheless, in several diseases shown to be a truth well established.

Forming, with Broussais and some other physicians, in this case a very unfavourable prognosis, yet, considering the powerful effect of mercury as a discutient, I think that it was justifiable to give the patient a chance of its operation.

But conceiving the embryo of the disease to have had existence before or immediately after the blow was received in school, which is by no means improbable, the case further shows here, indeed, which was scarcely at all observable, and attracted so little notice as to require the after reflections of solicitous and intelligent parents to mention any indication of its probable commencement, until after the excitement from scarlatina, when the sudden and rapid progress which took place, yet so dreadful was the havock which it produced, that we are astonished how the functions of life lasted so long as they did. This leads us almost to regret the absence of the grand monitors of nature in most diseases, pain and the derangement of the intellectual functions. However desirable this always is to the unfortunate patient and the friends, yet this very circumstance tends to lull us into fatal inattention and security, until all our art is likely to be unavailing, consequently, we seldom see the beginnings or first stages of the disease. In this country, our being, until very lately, but rarely permitted to examine the body after death, may account for so little being said satisfactorily by those of our great masters, to whom we look up for information on this and some other diseases, but which have of late attracted the notice of some of the profession of the present day. This requires that we should more particularly be on the alert in inquiring after and observing narrowly every circumstance, and be careful in recording them, and may justify the observations made from only one or a few isolated cases, even though these be imperfect.

Dunfermline, May, 1821.

XII.

On the Purulent Discharge of the Tympanum of the Ear. By JOSEPH SWAN, Esq., Lincoln.

DOUBTS have long existed in the minds of many men of the highest eminence in the profession, about the proper method of treating the diseases of the ear, attended by a purulent discharge. So different, indeed, have been the sentiments of different men on this subject, that whilst some have been entirely averse to attempts to put a stop to the discharge, this practice has been considered by others as perfectly erroneous.

Mr Saunders, to whom the world is much indebted for his researches into the nature and treatment of diseases of the ear, has not objected to putting a stop to the discharge in any case; and his plan is acted upon, at the present time, with the greatest advantage in general to those who are affected with this complaint; but, as cases now and then occur where the stoppage of the discharge, or even the attempt to stop it, is attended with dangerous, and even fatal consequences, I thought it might not be amiss to endeavour to point out the cases where experience shows there is ground for such apprehension.

The case I am about to relate is by no means uncommon; but I bring it forward, because, where similar ones have ended fatally, so little notice has hitherto been taken of them, with a view to point out the best method of treatment.

Mr S., about 50 æt. had an inflammation of the tympanum, which terminated in suppuration, when the abscess broke, and relieved him. He afterwards complained much of his head, and had a disordered state of the stomach. He had blisters applied for the relief of his head, and took occasional doses of blue pill, and some other medicines. As he continued in a bad state of health, he went into the country for change of air, where, as the discharge of the ear continued, he was recommended to use an astringent injection as the means of putting a stop to it. After a few weeks he returned home much benefited by his journey. Though he still complained of his head, yet, as he had used the injection without any apparent injury, I did not object to his persevering in the use of it.

On the evening of the 8th of October, which was a day or two after I saw him on his return home, he sent for me, and I found him complaining of great dizziness, with some pain and confusion of the head. As he had eaten a hearty dinner, I conceived that the symptoms might proceed from the stomach. I therefore prescribed for him four grains of submuriate of mercury, and some purging medicines, desiring at the same time that the injection might be entirely discontinued. The next morning, as I found him no better, and though the pulse was hardly affected, yet, as I suspected that the irritation from the ear had extended to the membranes of the brain, and thought that inflammation of them might possibly be impending, I took some blood from the arm, which relieved him very much. I ordered a blister to be applied to the back of the neck, and the following draught and bolus to be taken every four hours.

℞ Sulph. magnes. ʒiss. syrupi. ʒi. aq. puræ ʒxi. M. f. haust.
℞ Pulv. antimon. gr. iv. submur. hyd. gr. i. cons. ros. can. q. s. f. bolus.

The blood was inflamed, and had the buffy coat.

On the 10th some leeches were applied to the temples, and, though he seemed better, yet, as I was very apprehensive about the termination of his complaint, I requested that my friend Dr Cookson might see him; and his opinion as to the nature of the complaint entirely coincided with my own. The same medicines were given for some time, and afterwards some gentle tonics. He was kept perfectly still, and a strict antiphlogistic regimen was enjoined. For some time, walking, or the least motion of the head, appeared to affect the brain, producing the dizziness, and most uneasy sensations in the head.

The discharge during all this time continued, but, by great care, after some months, it abated of itself; and, though it was a long time before the head felt entirely as it ought to do, yet the unpleasant sensations gradually wore away; and, though the hearing of the affected ear is still very far from being perfect, yet it is much better than could reasonably have been expected.

In this case the discharge of matter was very great; and if the osseous parietes of the tympanum had not ulcerated through so as to expose the dura mater, that membrane was very much irritated, and from some cause, whether from the injection or not I cannot say, the irritation was very much increased, and communicated to the brain.

Whenever a purulent discharge from the ear is attended with much complaint of the head, suspicions ought always to be entertained that the dura mater is irritated in consequence; and on any increase of the affection of the head, effectual measures should be taken to arrest the progress of the mischief by bleeding, and a strict antiphlogistic regimen. In such cases we ought not to wait until there are decided symptoms of inflammation of the brain or its membranes, because then, as cases on record show, suppuration extending some way on the base of the organ can hardly ever be prevented; but the remedies I have mentioned ought to be used immediately on the increase of pain in the head and ear.

To those who have not much considered the case, these symptoms may not seem to require such active treatment; but if both the patient and practitioner's fears are suffered to be lulled into security for many hours after their approach by palliatives, the disease will have made such progress as probably to resist the employment of every thing that can be done. I consider, therefore, that when there is a discharge from the ear, and the head is complained of, all that ought to be done is an attention to the general health, and an attempt by counter-irritation, as blisters behind the ears or on the back of the neck, to remove the disease from the ear. The meatus ought not to be stopped up with cotton or any other substance to prevent the free escape of the matter, as I am convinced, that when the discharge is great, such a practice is very wrong, and probably not only adds to the irritation by its confinement, but may lead nature to attempt some other outlet, and thus cause an absorption of the bone, and consequent exposure of the dura mater. And, upon the whole, I think that on no account, in the case where the discharge is accompanied by pain in the head, ought astringent injections to be used to put a stop to the discharge, as, when it has been stopped by a perseverance in this mode of treatment, the brain has always appeared to suffer, and the consequences have been fatal.

Lincoln, May 6, 1820.

XIII.

A Case of Delirium Tremens, followed by Hemiplegia. By David Nicol, Member of the Royal College of Surgeons, London.

Should you deem the following case sufficiently interesting to merit a page or two of the Medical and Surgical Journal, I beg leave to present it to you, simply transcribed from the case-book. By adding to the number of facts already collected, it may, perhaps, in some measure, contribute to illustrate the pathology of a disease comparatively but little known.

William Barwood, ætatis 39, a seaman on board one of the East India Company's China ships, a large athletic man, but (as we frequently remark in the appearance of sailors) who bore the marks of premature age and impaired constitution, was attacked with acute hepatitis five months previous to the affection about to be described. It readily yielded to the influence of venesection, purgatives, blistering, and the administration of calomel, carried to the induction of ptyalism. He continued well until November 17th, 1819, at which time the ship lay moored in the river of Canton, in China. On that day he was observed sitting between decks in what was at first conceived to be a state of intoxication, with slabbering of saliva, wildness of countenance, indistinct articulation, difficult deglutition, tremulous motion of the hands, and subsultus tendinum. Made no complaint of pain. On examining his mouth the gums appeared swollen and ulcerated; tongue white and moist; pulse natural; skin cool. Said he had passed two natural stools during the day, denied drinking, and could attribute his salivation to nothing he had taken. He dozed throughout the night, and next morning complained of some pain in the right side, but there was no tenderness on pressure. His pupils were dilated, and but little sensible to the impression of light. Salivation continued, with no peculiar fetor of the breath. He lay in a state of stupor, and on being roused seemed at first to have lost his recollection, with deep sighs and gaping, but gave coherent answers when questioned.

Appl. emp. vesicat. lateri dextro.

19th.—About 11 o'clock last night he began to recover from his stupor, and complained of pain and soreness across the supercilia, and in the globe of the eyes.

Adhibeatur emp. vesicator nuchæ.
Sumat statim P. jalapæ comp. ℈ii.

The blisters have risen well; no complaint of head or side; bowels moved freely, and stools of natural appearance; excessive salivation; gums much ulcerated; pulse weak and under the natural standard; tremors of the extremities, subsultus tendinum, and imperfect articulation continue.

Bibat. vini rubri cyathum bis terve in die.

21st.—Slept none last night; tremors as before; tongue white and furred; pulse and skin perfectly natural, except that the former is somewhat weaker than in health; pupils more sensible on the approach of light; salivation still severe; deglutition easy; he seems perfectly collected, and confesses having drank about half an English pint of samsoo * on the night of the 16th.

Cont. vinum ter quaterve die.

22d.—Slept tolerably well; the tremors have nearly ceased;

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* A deleterious spirituous liquor, prepared by the Chinese, made use of by the lower orders, and by them retailed to the seamen of European ships. Dr Johnson quotes the following as the ordinary mode of preparing samsoo. "The rice is kept in hot water till the grains are swollen, it is then mixed up with water, in which has been dissolved a preparation called "Peka," consisting of rice-flour, liquorice-root, anniseed, and garlic. This hastens fermentation, and imparts to the liquor a peculiar flavour." He adds, with great appearance of truth, "It is probable, however, that other more active ingredients are added to that in use among the lower classes at Canton."—Influence of Tropical Climates, &c. p. 85.

articulation more distinct; the saliva continued to flow, but his mouth is healing; belly regular.

23d.—Is recovering slowly; appetite tolerably good; salivation continues.

From this time he improved progressively, and on the 1st of December returned to easy duty. He still retained some impediment of speech and peculiarity of manner.

He was again admitted into the sick-list, December 21st. Since his last illness, (apparently the consequence of drinking samsoo,) his articulation has been in some degree imperfect, embarrassed, and at times almost unintelligible; his conversation and actions sometimes inconsistent, but his appetite and general appearance good.

I find that since his return to duty, he has been reserved; frequently inclined to sleep; his messmates have lately observed irregular motions of his limbs, and slight tremors. Since Friday last (17th) these latter symptoms have become most conspicuous. He has now universal trembling; constant motion of the hands, perpetually conveying them to different parts of his body, sometimes with a convulsive quickness and irregularity. His answers are confused and contradictory, and he seems disposed to conceal his ailments. For some time past (as his messmates say) he has also laboured under complete incontinence of urine, but he says that he is only unable to restrain a frequent desire to void it; however, his clothes and bedding are constantly wet. His bowels are at present rather loose; pulse 70, soft and languid; tongue clean; complains of pains in the knee and hip-joints, chiefly in the night; denies any other ailment.

Appl. emplast. vesicat. sacro.
Capiat nocte opii gr. 1. formâ pil.

22d.—Has passed a good night; says he has less difficulty in retaining his urine; otherwise as yesterday.

Rep. opium hora somni.

23d.—As yesterday; belly costive.

℞. P. jalapæ gr. x. Hydrarg. submur. gr. iii. M. ft. pulv. stat. sumendus.
Sumat. opii gr. ss. quater in die.
Bibat vini rubri ℥iv. quotidie.

24th.—Rested well; less tremor; had one stool from the purgative.

Cont. vin. et opium.

27th.—Tremors subsiding; in other respects as at last report.

Cont. medicamenta.

30th.—Discovered in him an inability to use the right arm and leg with freedom; says they are both benumbed; the hand is with difficulty raised to the head, and he complains of pain in the arm, about the insertion of the deltoid muscle; twitchings and convulsive motions of the neck and arm on the opposite side; gives contradictory answers, and is incapable of telling what he has been doing the last hour; appetite impaired; pulse feeble; countenance languid.

Abradatur latus capitis sinistrum, et adhibeatur emplast. vesicat. magnum.
Contin. alia medicamenta.

31st.—Blister risen; he seems to have gained more power in the use of his arm, &c.; urine dribbles from him, and evacuations per anum pass off involuntarily. The convulsive motions are less frequent, and his countenance seems somewhat improved. Otherwise as yesterday.

Fricetur spina dorsi linimento stimulant.

January 1st.—Less confused in his conversation; the use of the right arm and leg more free; has passed no feces during the night.

℞ Carb. ammoniæ gr. vj.
Pulv. cinchonæ ℈j. M. ft. pulv. ter indies sumendus.
Cont. vesic. Fiat perpetuum vesicatorium.

2d.—Is in a feeble state; careless of any kind of exertion; never asks for food or drink, but takes small quantities of either when offered. The use of the arm and leg continues more under the influence of the will; makes no complaint of pain; pulse small and feeble. Bowels have not been moved the last 24 hours.

Habeat statim pulv. rhæi ℈i.
Cont. alia ut antea.

3d.—Three or four stools passed involuntarily. His general appearance is better, and he has ate a moderately good breakfast this morning.

4th.—Is more collected; gives more direct answers, and remembers what has occurred during the last day. One stool has been passed at will. His appetite is improving, and he is in good spirits.

Cont. medicamenta.

6th.—Has now sufficient power over the right arm to make a firm grasp with the hand, bring the arm over the head, or convey food, &c. to the mouth. The opposite hand is perpetually in motion, when in the erect position, but quiet when supported, or when at rest in his hammock. The alternate progression of the right leg much improved; articulation and deglutition more easy and perfect; less tremor; appetite good; bowels costive.

Medicamenta ut antea. Habeat ext. colocynthidis c. q. s. pro re nata.

7th.—His bowels have not been moved by the colocynth.

Capiat P. rhæi ʒss.

8th.—Bowels freely evacuated. Continues to improve.

14th.—Has nearly regained the perfect use of his right side; and has more command over the rectum. Conversation much improved; and he gives sufficient and direct answers to questions relative to his feelings, &c. Appetite tolerably good. Blister healed.

22d.—He still performs the motions of the right side with some difficulty; his answers are pertinent; and his memory more retentive; but he has no command over his evacuations. A seton was inserted over the lumbar vertebræ yesterday.

Applicetur vesicatorium capiti u. a.

Cont. pulveres.

February 4th.—Seton discharges. Has no command over the sphincter vesicæ, but can retain his feces, except after the administration of a purgative. When spoken to, he assumes an insignificant smile; and is pleased with trifles.

Cont. remedia.

To have a bottle of ale daily.

15th.—Seton discharges profusely. Is now quite collected; converses rationally; and has great power over his right side. Is provided with some easy sitting employment, for two or three hours in the forenoon.

24th.—He has now a perfect use of the right side; but on an attempt to raise weights, he feels much weakness in the arm, about the insertion of the deltoid. Conversation rational; deglutition and articulation natural; sphincter ani under the influence of the will; and that of the bladder during the day; but finds himself wetted in the night.

The seton to be removed, and ordered to take a glass of port wine about mid-day; to use the shower bath every other or third morning; and employed in light work during the day.

Every symptom now gradually subsided, and on the 1st of April he was enabled to resume his original duties.

Remarks.—Considering the nature of the liquor presumed to have been drank, and the facility with which the seamen procured it, notwithstanding the strictest prohibition and precaution on the part of the officers, I think the train of morbid symptoms that followed, may be readily admitted as the effect of the samsoo.

As I did not see the patient until several hours had elapsed from the commencement of the disease, I am unable to say whether the symptoms then present were consequent to any, or a high state of excitement: However, the existing appearances seemed to indicate considerable nervous exhaustion, with consequent partial congestions in the brain and liver. These last were apparently removed by blistering; the bowels were opened, and diffusive stimulus (wine) administered; under which he seemed to improve rapidly. The tremor subsided; sleep returned; he regained the power of swallowing, and more perfect utterance, and became calm and collected.

The most prominent peculiarity attending this affection was the immoderate flow of saliva, with ulceration of the lining membrane of the mouth.

I had an opportunity of witnessing the termination of another case, supposed to have originated in the same cause. The patient (as I was told by the medical gentleman who had the care of him) was taken ill on Tuesday October 19th. He was unable to stand; indifferent to surrounding objects; and to all appearance drunk. No great excitement was evident from the beginning; and he had since continued to sink rapidly. On Friday, when I saw him, he lay in a comatose state, with his mouth open; eyes closed; pulse 120 and feeble; skin of natural temperature; he had then no tremor. Was with difficulty roused, and then appeared to understand questions; but having lost the power of articulating words, he answered by feeble mutterings and signs. Mouth and tongue clammy; teeth covered with black sordes; stools clay-coloured. When raised in bed he swallowed with apparent ease. Showed no symptom of pain. He expired next morning.

XIV.

Case of Encysted Hydatids, occurring in the Muscular Structure. By John Baird, Esq. one of the Surgeons to the Newcastle Infirmary.

I am induced to publish the following case of Hydatids, because I think it valuable, on account of its contributing something to our pathological knowledge.

The case is not only interesting from its singularity, but also in affording so perfect a specimen of this peculiar morbid formation occurring amongst the muscles of the body. Every person who has paid any attention to morbid anatomy, must have frequently found hydatids in the secreting structures of the system, but I do not recollect to have seen recorded anything like a perfect encysted case of the disease met with in the condensed cellular structure, forming the connecting medium of muscles.

SARAH CHAPMAN, aged 29 years, of a leuco-phlegmatic habit, applied to me for surgical advice on the 18th of January 1821, respecting a tumour situated at the posterior part of the thigh. This tumour was of an oblong form, and extended from the insertion of the glutei muscles nearly into the ham, and apparently running in an exact line above the linea aspera of the femur. She has been conscious of the presence of this disease about six years.

I considered the tumour to contain fluid, as I was sensible of its fluctuating upon pressure, although very indistinctly. I therefore determined to withdraw the fluid with a trocar, and attempt obliteration of the cavity of the cyst by means of a stimulant injection.

On the 23d of January, I introduced the trocar into the substance of the tumour, but was surprised to find that no fluid flowed through the canula. I then supposed I had been deceived in my examination, and that the morbid growth was of an adipose nature. I immediately proceeded to extirpate the tumour, making a long incision over the centre of it. Having divided the fascia of the thigh, and exposed the surface of the tumour, lying between the biceps flexor cruris and the muscles which form the inner ham-string, it seemed to dip below the belly of the biceps. The glistening appearance of the surface of the tumour was so different from the condensed covering of adipose substance, that I was in doubt how to proceed with the dissection, particularly as the disease lay so deep. I therefore passed the point of the scalpel into the tumour, to ascertain its nature, and was surprised by the evolution of an immense number of hydatids. Many of them burst in passing out of the cyst, but nearly a hundred were brought away perfect, about the size, and possessing the peculiar transparency of grapes.

Having emptied the sac, I began to dissect it from its deeper attachments. In doing this, I was obliged to divide a great number of muscular fibres, as it was so closely connected with the substance of the muscles. In performing this dissection, a very large branch of the profunda was divided, which bled furiously, and lying deep, was not easily secured. Wherefore, as the upper part of the sac extended beyond this, and dipped below the insertion of the glutei muscles, I thought it prudent to proceed no farther, and left a small portion of the upper part of the cyst adhering.

The sac was exceedingly thick, and the inner surface displayed a rugose appearance, covered with a greyish secretion, resembling very nearly the villous coat of the stomach.

The parts were brought into contact by adhesive straps, and an anodyne was given to her when she was placed in bed.

25th.—She has suffered extreme pain since the operation; her pulse is very frequent; and she labours under great nervous irritation of the system. She vomited occasionally yesterday, and thirst has been very distressing to her. I applied an emollient poultice to the thigh yesterday afternoon, to allay the irritation of the divided part, and gave her some calomel and opium, followed by a saline purgative.

These medicines operated freely, and she is much better in every respect this morning. She expresses a desire for a mutton chop, which I have allowed her. The cavity of the wound is filled with coagulum, and has a sloughy appearance. The poultice to be continued until the wound assumes a clean appearance; and she is ordered to take the saline julep freely, together with an anodyne, as long as it may be necessary.

30th.—Excepting some little nervous irritation, producing headache and occasional nausea, she has continued tolerably well. The wound has become quite clean, and the colour and consistence of the purulent discharge is improving. I have discontinued the use of the poultice, and approximated the granulating surfaces by means of adhesive straps.

February 7th.—The granulations had contracted so much, as to bring the lips of the wound almost closely in contact. She has, however, been attacked with inflammation of the throat, and symptoms of fever, which have interrupted the healthy action of the wound, and in consequence the newly-formed parts have given way, and the granulating surface looks glassy and inactive.

February 14th.—After the disordered state of the system was subdued, the healing process went on with increased activity, and she is now quite well.

Newcastle, February 20, 1821.

XV.

Case of Injury of the Spinal Marrow. By THOMAS ARTHURE, M. D. Licentiate of the Royal College of Surgeons, Edinburgh, Honorary Member of the Royal Physical Society, and Physician to the Rathdown Dispensary and Fever-Hospital, County of Dublin.

THE valuable paper inserted in the Edinburgh Medical and Surgical Journal for January 1818, on diseases of the spinal marrow, by Dr Abercrombie, having strongly attracted my attention, I beg leave to send you the following case on that subject for publication, if you should deem it worthy of a place in that valuable periodical work.

A lady, aged 52 years, of active habits, on the 1st of December 1818, having, by accident, fallen off a chair she was sitting on, received a contusion upon the os coccygis. The pain which it occasioned subsided in a short time, and, by means of rest and quietness, had totally gone off in a few days afterwards.

On the 20th of the same month, whilst sitting at needle-work, she suddenly cried out, in the presence of her children, that she was losing her senses,—had got a most excruciating pain in the forehead and temples,—and feared that it would terminate in apoplexy. She desired that an apothecary should be sent for to bleed her, and one was instantly procured, who executed her command.

The anxiety of her family and friends, however, who considered her as dying, induced them to despatch a messenger for my advice and attendance.

On my arrival, which was immediate, I found her in a very alarming and exhausted state. Eight ounces of blood had been previously obtained by venesection. Pulse scarcely perceptible; extremities cold; complexion sallow, with a degree of collapsed appearance, and a constant vomiting.

By means of bathing her feet in warm water, and the application of bottles filled with hot water to them, their natural temperature had been restored, and the pulse, by degrees, was improving in strength, though very irregular and intermitting. The vomiting still continued, and the pain of the head, notwithstanding the use of twenty leeches, was in no way mitigated.

The case remaining very urgent, it was thought prudent to call in the aid of Dr Philip Crampton, (surgeon-general,) resident in Dublin.

On his arrival, and upon mature deliberation, we ascribed her disorder to the fall she had previously met with, and the present symptoms to an affection of the brain, arising from its sympathy and connection with the spinal marrow. We also considered the case as one of rare occurrence, and attended with imminent danger. In addition to the foregoing treatment, blisters were applied to the calves of the legs, a sinapism to the nape of the neck, and a stimulating cathartic enema was ordered to be as quickly as possible administered.

Dec. 21st.—The enema having failed of its due effect, a smart purgative was given, which fortunately lay on the stomach, and caused several evacuations, which gave great relief. Upon the suggestion of Dr Crampton quantities of ice enveloped in napkins were ordered to be constantly applied over the forehead and temples.

The anxiety of her friends being still very great, Dr Perceval, an eminent physician of Dublin, was requested to see her, who immediately complied with the request, but no material alteration of the plan of treatment was judged necessary.

By the application of the ice-cloths, and daily administration of purgatives, she evidently derived great advantage, and was nearly convalescent, when, about midnight, on the 4th of January 1819, I received a sudden and unexpected summons to visit her, and on my arrival found her complaining of excruciating pain of the head, with profuse perspiration trickling down her face, along with irritating sensations about the os coccygis, bearing down pains in the uterine region, and spasms of the calves of the legs. She also felt a sensation indescribable, but of a painful nature, ascending along the dorsal vertebræ, and terminating about the foramen magnum of the occipital bone.

Viewing those symptoms as the effect of irritation from the injury the spinal marrow had received, and considering the urgency and suddenness of the attack, and the lateness of the hour, which rendered a consultation with Dr Crampton inconvenient, if not impossible, I prescribed an antispasmodic and anodyne draught to be instantly taken, and repeated before morning if necessary. On my visit the following day I was much rejoiced to hear that a short time after taking the first draught she fell into a profound sleep, and was now perfectly free of pain. I, therefore, continued the same practice for two or three days afterwards, with very good effect, attending at the same time to the state of the bowels; after which, the pain having returned in some degree, I seized that favourable opportunity of requesting another consultation with Dr Crampton.

When we met it was agreed that the same antispasmodic and anodyne plan should be persevered in, with due regard to the state of the bowels, and that a stimulating blister should be applied to the os sacrum.

The lady having been teased sufficiently (to use her own expression) with blisters, would not consent to such an application, but insisted to have leeches used in its stead. They were applied, and were followed with some degree of nervous debility. In this state I was again sent for, and found her pulse again intermitting. I prescribed an anodyne and antispasmodic mixture of increased strength, and found her the following morning much refreshed after a sound sleep, much stronger and with no intermitting pulse.

Feeling very forcibly the value of Dr Crampton's suggestion of a stimulating blister, I at length prevailed on my patient to admit the application of a stimulating adhesive plaster, composed of diachylon plaster, Burgundy pitch, with a large proportion of opium, and a small quantity of mercurial ointment, with camphor, the whole being thinly sprinkled with powdered cantharides, but not in so large a proportion as to cause vesications.

She made use of this plaster spread on leather for three months afterwards, with a sensation of much comfort, and I would say also, not without benefit.

Having had occasion, from this period, to pay her visits but occasionally, I have only further to add, that she daily improved in health and strength, and though a long time elapsed before she could make use of her legs in the exertion of going up or down stairs, or bear the exercise of a carriage, she at length overcame these difficulties, and now enjoys as perfect a state of health and cheerful spirits as she had ever before possessed.

I have now stated the simple facts as they appeared to me during an attentive observation to every symptom, change, and peculiarity of the disease, and have submitted them, and the mode of treatment pursued, to public notice, feeling it to be the duty of every practitioner so to do in all cases of consequence. And I am also desirous of calling the attention of the profession to that important object of research, the morbid anatomy of the spinal cord and the diseases to which it is liable. It is by prosecuting this interesting subject carefully and philosophically, and by publishing the aggregated cases and observations of the profession, that the pathology of several diseases, hitherto involved in the greatest obscurity, will be rendered less difficult, and that we can hope to arrive at any satisfactory conclusions of the comparative advantages likely to result from any of the different modes of treatment recommended. To Dr Abercrombie, therefore, the merit is justly due, of having roused the attention of the profession to the diseases of the spinal marrow,—of having opened a field of new and interesting observation and inquiry—and of having imbodied our looser knowledge of them into a simple and compact form, the whole being enriched by his own observations.

Monckstown, County of Dublin,
December 17th, 1820.

PART II.

CRITICAL ANALYSIS.

I.

A Dissertation on the Treatment of Morbid Local Affections of Nerves: to which the Jacksonian Prize was adjudged by the Royal College of Surgeons. By JOSEPH SWAN, Member of the Royal College of Surgeons, and Surgeon to the Lincoln County Hospital. 8vo, London, 1820. pp. 196.

THERE is, perhaps, no order of maladies about which more has been said and written, than those to which the name of Nervous has been given; but it is nevertheless remarkable, that the degree of precise information and elucidation has by no means corresponded with the number and consequence of the contributions which have been made with this view. These diseases appear, in short, to have formed a legitimate inheritance to the greater portion of the mysticism and obscurity which has at different periods prevailed in medical science; and an affection of the nervous system has been at all times a convenient and useful mode of explaining any symptom which perplexed the ignorant, or dazzled the indolent practitioner of the healing art. To many pathologists the nerves are the most indispensable organs in every condition, whether healthy or morbid, in which the body may be placed; and it is truly astonishing to see with what facility they are made to account for all the changes which are observed in the course of diseases. To such observers nothing is a secret, and nothing however obscure is left unexplained; the whole phenomena of the nervous system, as it is emphatically named, are perceived as palpably and distinctly, as if the objects of examination were seen through diaphanous media, or exposed at the moment to sensible inspection. To some these strictures may appear unwarranted; but we deem it pretty certain, that all who have glanced, even with a moderate portion of attention, at the history of medical theory and pathological speculation, from the days of Dr Willis, who first unlocked this treasury to the profession, down to the present hour, when spasm, nervous irritation, excitement, and collapse, are still familiar to the lips and ears of many, will admit, that there is but too much reason for expressing ourselves as we do. The vague and unsatisfactory opinions which are daily avowed and acted upon in this department of pathographical science seem to be unceasing and innumerable, and to all who have a taste for precise and accurate conceptions of the objects which they actually know, it must be equally painful and discouraging to contemplate this endless revolution, in which no progressive advancement is made, and the variety consists only in the difference of names.

It was, therefore, with considerable present satisfaction, and great anticipation of future accessions, that we turned to the work of Mr Swan, who has been devoting his attention, with some success, to the elucidation of one department of the subject; and though we by no means wish Mr S. to believe that his book is as well executed as we think his talents and opportunities enable him, yet, as a beginning to a great work, to the accomplishment and completion of which many different hands must unite their efforts, we think that it is very creditable to the author, and may exercise a beneficial influence on professional inquiries. The professed object of Mr Swan's work is the treatment of morbid local affections of the nerves; and it would be therefore unjust to blame him for omitting to speak of the healthy organization of these textures, as well as the morbid changes which it is the province of the pathologist to investigate and describe. As this, however, is in some degree necessary, in order to understand these changes and the mode in which they are effected, and, as it may be presumed, that all our readers have not leisure to collect, from the different works in which they are scattered, the details which the recent labours of pathological anatomists have added to our stock, we shall deem no other apology requisite for detaining them very shortly, while we state, in the most precise manner, what is known positively regarding the organization and pathology of that part of the nervous system, the diseases of which have been the subject of Mr S.'s investigation, while we, at the same time, give a more detailed account, and express a more particular opinion of the labours and merits of the author.

The nervous system of the animal body includes, according to the present state of pathological opinion, two great general divisions. The first of these is collected in a single and indivisible mass, and contained in a peculiar cavity formed by part of the osseous system of the animal. In the less perfect tribes this is limited to the vertebral column, or something analogous to it; but in man, and the more perfect animals, we find a large cavity at the superior extremity of this column superadded. The second division of the nervous system, with which alone we are at present concerned, is found in the form of long chords or threads, mutually connected, and running in various directions through the body in the mode of ramification. To these the name of nerves or nervous trunks has been long applied. Each nerve forms connections in three different ways: *1st*, A nerve must be connected to some part of the central mass by one of its extremities; *2d*, It must be connected to some other texture or organ, or part of an organ, by the other extremity; and, *3d*, It may be connected to other nerves by a species of anastomosis. By means of the two former connections it is supposed to maintain a communication between the central mass and the remoter organs, and by the latter it is understood to be subservient to a more general and extensive intercourse, which is believed to be necessary in various functions and actions of the animal system. Every nerve consists essentially of two parts,—one exterior, protecting and containing; the other interior, contained and functional, that is, the indispensable part of the nervous structure. The first of these, which has been known since the time at least of Reil by the name of *neurilema*, (νευρον et ειλεω, *nervi involucrum*,) has the form and nature of a dense membrane, not quite transparent, which is found at the exterior of the nervous filament or trunk, and invests the proper nervous substance. It must not, however, be conceived, that the neurilema has the form of a cylindrical tube, in the interior of which the nervous matter is contained. This latter disposition, if it actually exist, applies only to the smaller nerves, and to some of those which go to the organs of sensation,—a difference which we may have occasion to notice subsequently. If, in truth, we take any large nervous trunk, for example, the spiral or median nerve of the arm, or the sciatic nerve of the thigh, we find that it is composed of several small nervous chords placed in juxtaposition, and each of which, consisting of its appropriate neurilema and nervous substance, is connected to the other by delicate cellular membrane. These, however, do not, through their entire course, maintain the parallel disposition in respect to each other, but are found often to cross and penetrate each other, so as to form an intimate interlacement of nervous chords and filaments, each of which, however minute, is again accompanied with its investing neurilema. As this membrane must, therefore, be liable, from its various situation, to great modification, it is easy to see that all opinions on its nature derived from its thickness or transparency must be liable to considerable fallacy. Reil and Bichât, who have devoted more care and time to the examination of its nature and structure than any other inquirers, thought it resembled the pia mater, and was indeed derived from it. Scarpa, on the other hand, seems to view it as connected in anatomical origin and character with the dura mater. But we believe it is safer, in the present state of our information, to consider it as a particular texture, and undergoing modifications peculiar to itself. It is surely unnecessary to expect every one membrane to be derived from some other, the origin of which is left unexplained; and it is obvious that the supposition of deriving it either from the pia or the dura mater could not, though admitted, explain either its functions or its structure. That it is connected, as Bichât thinks he has demonstrated, with the pia mater, or rather with the ligamentum denticulatum, we are not unwilling to believe, although we could never certainly satisfy ourselves that this is so easily seen as he seems to make it.

Although the neurilema when examined in the nervous chords, taken in general through the system, exhibit the arrangement which we have now described, yet this is observed to vary somewhat in particular situations; and these varieties in the neurilematic disposition occur principally in the nerves which are distributed on the proper organs of sensation. The olfactory nerve, for example, is soft, pulpy, and destitute of neurilema, from its origin in the sylvian fossa to the grey bulbous enlargement which terminates its passage in the cranium; but as soon as it reaches the *canaliculi* of the ethmoid bone, and begins to be distributed through the nasal anfractuosities, it is distinctly neurilematic. The optic nerve is still more peculiar in this respect. The instant it quits the optic commissure it begins to be invested with a firm general neurilema, which sends into the interior substance of the nerve various membranous septa, forming separate canals, in which the nervous matter is contained. These septa, however, are so thin, that at first sight the optic nerve seems to consist merely of one exterior membranous cylinder enclosing the proper nervous substance. Lastly, we may remark, that the auditory nerve, or the soft portion of the seventh pair of most anatomical writers, is the only nerve in which this covering cannot be traced.

The second component part of the nervous chord or filament is the proper nervous matter which occupies the cavity of the neurilematic canals. Exceedingly little is known concerning the nature or organization of this substance. It is whitish, somewhat soft and pulpy, but whether it consist of aggregated globules, or of linear tracts disposed in a situation parallel to each other, seems quite uncertain. It has been presumed, rather than demonstrated, that it resembles cerebral substance; but this analogy, though admitted, would throw little light on the subject; for at present it is almost impossible to find two anatomical observers who have the same views of the intimate nature of the cerebral substance itself.

The structure which we have now described of the nervous trunk may be easily demonstrated to the satisfaction of even a very sceptical observer. When a portion of nerve is placed in an alkaline solution, the whole, or nearly the whole, of the nervous matter is softened and dissolved, or may be washed out of the neurilematic canals which are not affected by this agent, and the disposition of which may be then examined and demonstrated. Aqueous maceration may likewise be employed with great advantage to elucidate this texture; for it separates and decomposes the cellular membrane, by which the neurilematic canals are united, and subsequently occasions the decomposition of the nervous substance, while it leaves, at least for some time, the neurilema not much affected. When, however, the maceration is too long continued, it is separated and detached like other macerated textures. Lastly, if a large nerve be placed in a diluted acid for the space of one or two weeks, the neurilema is gradually dissolved, and the nervous matter becomes so much indurated and consolidated that it may be separated from the contiguous chords with great facility. In undergoing this change the portion of nerve becomes much shorter, and considerably contracted,—is subjected, in truth, to the process of crispation; so that, unless a large nerve like the sciatic be employed for the experiment, it may be impossible to obtain the result in its most satisfactory form. These experiments, with many others of the same nature, were first performed by Professor Reil, and afterwards repeated, multiplied, and considerably varied by Bichât. We have subsequently had occasion both to see them performed by a late eminent anatomist of this city, and to repeat them in person, and when the proper precautions were taken, we can assert, that they never failed to give the results as described by these distinguished authors.

The nervous texture, like all others, receives a proportion of what may be denominated the systems of distribution. We find in nerves, for example, cellular membrane and blood-vessels. In the substance of the former, the disposition of which we have already remarked, we find the more conspicuous branches of the latter distributed; in a more minute and divided state they penetrate the neurilema, and the substance of the nerve. Reil, who derived his conclusions from the result of delicate and successful injections, greatly exaggerated the quantity of blood which they convey; for it is quite certain, that in the healthy state, hardly any red blood enters the nervous texture, as may be easily shown by exposing the sciatic nerve of a dog or rabbit.

Such is the structure of the nervous chord taken in its course in general; but in particular situations this structure may be considerably modified. The modifications to which we allude occur under two forms,—ganglions and plexus. We can spare leisure to notice only the structure of the former. Every ganglion consists essentially of three parts; 1st, an exterior covering; 2d, a collection of minute nervous filaments; and 3d, a quantity of peculiar cellular texture, by which these filaments are connected, and which constitutes the great mass of the ganglion. The ganglions are of two kinds, the spinal or simple, and the non-spinal or compound. These two kinds of bodies differ from each other, 1st, in the situation which they respectively occupy; 2d, in the kind of envelope with which they are invested; 3d, in the mode in which the nervous filaments pass through them and from them. The spinal ganglions are said to possess two coverings, one of which resembles the dura mater, the other the pia mater; the non-spinal or compound ones have likewise two coverings which are merely different modifications of cellular membrane. Both these sets of ganglions being, by maceration, stripped of their tunics, and deprived of the soft pulpy cellular matter, are resolved into an innumerable series of nervous threads, most of which are minute and scarcely perceptible, all continuous with the nerves above and below the ganglion. It would appear that the nervous chord, when it enters the one apex of the ganglion, begins to be separated into its component threads, which diverge and allow the delicate cellular tissue to be interposed between them; that these filaments are subsequently collected at the opposite extremity of the ganglion, and thus connected with the other nerve or nerves. Scarpa, to whom we are indebted for most of the knowledge we have of this subject, compares the arrangement to a rope, the component cords of which are untwisted and teased out at a certain part. Lastly, in the simply ganglions, the filaments of which they consist invariably follow the axis of the ganglion, but in the compound ones they are found to run towards the sides and emerge from them; and upon this variety in the direction and course of these filaments depends the variety of figure for which the two orders of ganglions are remarkable. We have endeavoured to state these points as briefly and perspicuously as our limits permit; but it is surely not difficult, after such an exposition, to discover the error of Bichât's notions on the structure and uses of these bodies. In the *first* place, This author's idea that the ganglions were so many nervous centres or minute brains, is not borne out by strict anatomical observation. *Secondly*, That they are connected with the order of involuntary actions, and influence these actions, is a gratuitous hypothesis, and may be true or false without being necessarily the case. *Lastly*, We would remark, as a circumstance of some importance, that the only difference between a ganglion and any other part of a nervous chord is, that in the former the minute nervous filaments appear to be uncovered with neurilema, and lodged in a mass of cellular membrane, which is then enclosed in the neurilematic capsule, while in the latter, each nervous filament has its appropriate neurilema, and the cellular texture, instead of being within, is on its exterior, and connects it to the others. Of the uses of the ganglions, we venture not to offer a conjecture, but must hasten to more assured and unequivocal matter.

Organized in the manner which we have now attempted to sketch, the nervous trunks are distributed in every direction through the animal body, but are observed to be finally lost in the substance only of certain organs, viz. those of sensation, of motion, voluntary and involuntary, and of glandular secretion. We are not unaware that these assertions will be considered a schism from the true anatomical faith which has been long taught by the lovers of nervous sympathies, influence, and excitement; but no fear of this kind will deter us from exposing the fictions of imagination, and adhering with unshaken fidelity to the truth of nature. Although it can never be doubted that anatomy is a science of pure observation, and must admit nothing which is not founded on this evidence, yet the nervous pathologists have, in defiance of this very obvious principle, long admitted the existence of nerves where they could not be seen or demonstrated by any contrivance whatever. The paralogism by which they satisfied their conscience, though not judicious, was at least appropriate and amusing. *First*, It was said, with a singular disregard for logical accuracy, you cannot deny the existence of nerves in a tooth, a tendon, or a bone, merely because you do not see them; you must reason from *analogy*, and infer that, as they are found in all the textures, so these cannot be destitute of them. *Secondly*, It was urged, that the fact of textures, which in the healthy state are insensible, becoming exquisitely painful when diseased, proved most unequivocally, that these parts are supplied with nerves. It seems, however, to have entirely escaped these pathologists, that by the first argument they might admit all the textures of the animal body to be essentially the same, though palpably different; and that the second was one of the most perfect specimens of circular reasoning, with which the understanding of the medical world was ever abused; for it must be obvious, *first*, that it implies that the presence of pain denotes the existence of nervous filaments, and that no part is painful unless it be endowed with nerves,—a doctrine which has been long presumed but never demonstrated; and, *secondly*, that, as this cannot be established by any direct proof, recourse must be had to the same evidence of analogy, by means of which the pain which was supposed to depend on nervous filaments when they did exist, was transferred to parts where they certainly were not observed.

We must proceed, however, to notice in what textures nerves have been observed, or have been found wanting. According to Bichât, whose scrupulous accuracy and credibility in observation entitle him to be relied on, in a matter of this description, nerves have never been traced in the following textures; cartilages, both articular and of the cavities; fibrous textures, viz. periosteum, dura mater, capsular ligaments, aponeurotic sheaths, aponeuroses in general, tendons and ligaments; fibro-cartilaginous textures, viz. those of the external ear, nose, trachea, and palpebrae; the semilunar cartilages of the knee-joint, that of the temporo-maxillary articulation, those of the intervertebral spaces; the medulla of bones, the lymphatic glands. To this we may add the testimony of a professed anatomist of the nervous system, whose reputation for patient and industrious investigation, cannot fail to sanction every thing which he has advanced. "In every subject," says Walter of Berlin, "in which I was desirous to trace the nerves, I injected the arteries with red-coloured wax, the veins with green, and even the lymphatics with quicksilver, so that I was enabled to distinguish the nervous filaments from each of these orders of vessels. By this contrivance, although it occupied much time and labour, yet I was satisfactorily convinced that the pleura, the pericardium, the thoracic duct, and the peritoneum, receive no nerves; nay that, contrary to the opinion of the most recent eminent anatomists, no nerves terminate in the lymphatic or conglobate glands. Sometimes, indeed, these organs are perforated by one or two twigs, as I have often had occasion to observe, but they instantly proceed to the next place assigned to them, and in which they are finally lost." *

To attempt to offer any opinion, or state any observations after the account thus given, by one of the most laborious and eminent anatomists of the last century, might be viewed by many as singular and unequalled presumption; but that we may not incur the charge, not unfrequently brought against reviewers, of making random and general assertions unsupported by proof, and of offering an opinion derived from inadequate or deficient, or careless observation, we may state, that, after an attentive examination of the dura mater, and the periosteum in many different subjects and in various ways, we have never been able to see any thing like a nervous filament proceeding from any nervous branch to these organs. We examined several years ago the synovial membrane with the same view, but always with the same disappointment; and we entirely coincide with Walter in adding to the above catalogue of aneurose textures, the peritoneum and pleura, in which we never could see that any thing like nerves could be found.

With these undeniable facts before us, it will not be difficult to appreciate the merit of those hypotheses which have employed the nerves so liberally in explaining the phenomena of life and morbid action. We must relinquish, in the mean time, all hopes of unfolding the mysteries of growth and nutrition, pain and inflammation, by the agency of the nervous power. A tendon, a fascia, and a serous membrane, grow and are nourished precisely as a muscle; they are liable to be inflamed and painful as much as any other texture, yet no nerve can be traced into their substance; and we cannot presume that these processes can be influenced by agents which do not exist where they are going on. It gives us great pleasure to perceive that Mr Swan has not attempted to explain these phenomena, although he has almost led us to believe that he has some faith in the doctrine of nervous sympathies where no nerves can be recognized.

"It perhaps will not be required that I say any thing of those affections of nerves which are only sympathies with some distant part, of which many instances may be enumerated; as pain in the knee, when the disease is confined to the hip; pain of the shoulder, when the liver is affected; and, what I have occasionally known, pain in the neck, from disease of the lungs; pain in the penis, in cases of

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* Præfat. Tab. Nerv. Thoracis et Abdominis, J. G. Walter.

stone in the bladder, and many other similar affections. All these affections are so common, that it would be useless to relate cases to prove them." pp. 39, 40.

Now, it is remarkable, that of all the examples to which Mr S. has here alluded, only one can be justly and fairly referred to the agency of the nervous power. This is the pain of the shoulder in cases of hepatitis. The others must evidently be ascribed to some of those obscure, and perhaps impenetrable properties, the play of which we occasionally observe in the progress of different diseases, but which we do not explain or even state in other terms, when we attribute them to the influence of the nervous system. It is hard to say whether any better success has attended the various opinions which referred sympathetic morbid phenomena to the communications of parts by means of blood-vessels, by continuity of cellular texture, or of mucous membrane; for the difficulties with which their application is embarrassed, and the imperfect solution which, in many circumstances, they afford, have furnished their opponents with an easy refutation. It has been urged, for example, against the influence of the continuity of cellular texture, that the parts which are most copiously provided with it, such as the scrotum, the mediastinum, &c., are not those in which the sympathetic actions are most conspicuous. Further, when the itching sensation of the glans, which is found to attend calculus in the bladder, is attributed to the continuity of the genito-urinary mucous membrane, it may justly be asked, why is the sensation felt at that single spot, and at none of the intermediate points between it and the situation of the material cause of irritation? And in like manner, when the burning sensation of the soles of the feet, which attends the ulcerating process of the bladder, is attempted to be explained by such means as the consent between the inferior extremities and the urinary organs, it is obvious, that, instead of explaining, *i. e.* of referring the circumstance to any more general fact, we merely express it in other terms. To demonstrate the nullity of the influence of continuity of membranous surfaces, Bichat divided, by a transverse incision, the œsophagus of a dog, and showed that, when the uvula was irritated, the motion of retching was still obvious in the stomach of the animal. This ingenious physiologist, who perceived and demonstrated the inefficiency of each of these modes of explaining the obscurities of such actions, was not, however, entirely discouraged, but, with a bold and decided air, claimed for his own system of animal and organic sensibilities the exclusive privilege of unfolding a mystery, which had long perplexed the most acute and reflecting pathologists. He looked on all sympathetic pains as mere aberrations of the internal sensitive principle, which refers to one part a sensation, the cause of which exists in another,—an irregularity or disturbance in the perception,—a species of hallucination, in short, which existed in the brain, but depended on a remote morbid condition. In this manner he explained the feelings which persons often experience, and refer to a limb which has been long removed from the body, and all those painful sensations which are felt in sound parts, but which indicate a disease in a different and not unfrequently distant situation of the system. It is utterly impossible for the most ardent admirer of Bichat's talents and ingenuity to defend this very obvious and superficial supposition. It assumes the existence of some internal percipient power, which is supposed to be liable to various errors and mistakes concerning the actual and true situation of various morbid actions. It is certainly not impossible that such a power may exist, but we have at present no direct evidence of it. Of the other sympathetic actions, which he conceived to depend on the organic sensibility and the insensible contractility, Bichat had the good sense not to offer any explanation. Of this description are the cutaneous exhalations in phthisis and hectic in general, some serous infiltrations which take place almost instantaneously, wonderful augmentations in glandular secretion, &c. Of all these, he concludes, the causes are absolutely unknown, and a thick veil covers the agents of communication, which connect, in this instance, the organ which transmits, and that which receives the sympathetic influence.

The sketch, for we call it not a picture, which we have thus rapidly given, is by no means encouraging; it holds out no flattering prospect to those who may yet cling to the doctrines of nervous power and sympathies, as to a cherished and favoured object of regard; or who may, at any future period, attempt the explanation of simultaneous phenomena by means so inadequate to the end. But we may also add, that the result of such explanations should be useful to all future observers and inquirers, and instruct them to distinguish the proper objects of physiological and pathological investigation, and to proceed in the true way of pursuing them. Let them distinguish the parts which are obviously supplied with nervous filaments from those which are not. Let them remark the proportion in which these parts receive nervous chords; and, when this is accomplished, let them observe, study, and arrange, the various properties which respectively belong to these organs; let them separate those which depend on the peculiar texture from those which depend on the nervous ramifications, and remark the properties or phenomena which occur in parts destitute of nerves, as well as those which are peculiar to parts evidently possessed of these organs. When this has been done there may be some ground for establishing, in a very cautious manner, some general principles regarding the influence of the nervous system; but without such preliminary labours, we contend, that the greater part of what has been hitherto promulgated, has been, and must be, necessarily premature, if not unfounded. It may be thought that we have been too sudden and too confident in removing, in this unqualified manner, so many textures and vital phenomena from the influence of this convenient agent; but we are satisfied that the present state of our information will warrant no more, and it is much better to unlearn the errors of nonage, and stop short with what is precisely ascertained, than to possess a confused and ill-digested mass of uncertainties and fictions constantly floating in the sphere of our intellectual vision.

The knowledge of the organization of the nervous texture cannot fail to facilitate the consideration of those morbid affections to which it is liable, and we trust, that this purpose will be, in some degree, accomplished by the preceding observations. We are, at least, certain that it contributes greatly to the formation of a proper arrangement of these diseases; and, when we examine the plan of our author, which we cannot help viewing as the most exceptionable part of his work, we are induced to think he would have simplified the subject very considerably by deriving his division from this source. As this circumstance renders all analysis extremely difficult, and, in some degree, impossible, we shall, in our further observations, employ an arrangement, which, though not better in itself, may yet be preferable for the purpose of communicating information.

The nervous texture must be liable to the influence of the same morbific agents which induce disease in other parts; it may be the seat of affections which attack all nerves in general and indiscriminately, or it may be the seat of morbid phenomena, to which some nerves only are liable. Every nerve may become inflamed, and this state may be produced by a great variety of causes. Contusion, compression, a ligature, puncture, rupture, entire division, may give rise to this process, or it may take place spontaneously, *i. e.* without any obvious cause. The inflammatory action may affect the neurilema, or the nervous substance, or both at once. In the first case, it seems almost certain that it gives rise to that assemblage of painful sensations, to which the name of neuralgia has been given. We cannot, indeed, prove this with absolute certainty, but there is at least a high degree of probability in its favour. *First*, it may often be traced to such causes as we know excite the inflammatory process,—cold, an injury, violence, or irritation of any kind; *secondly*, it is invariably attended with that sensation of heat which seems to denote the inflammatory condition; for the pain cannot be viewed as pathognomonic; and, *lastly*, though it generally occurs in paroxysms, yet this is common to several textures which, when inflamed, are painful only at a certain time of the twenty-four hours. We have never been partial to the fashion of reasoning on the nature of a disease from the effect of remedies on it, but we think that even here there is nothing inconsistent with the supposition which we have advanced. The local, and sometimes the general, detraction of blood proves beneficial; evacuants, counter-irritation, and the antiphlogistic treatment in general have relieved and sometimes cured. Even the irrational operation of dividing the nerve, which, we trust, is now exploded, seems to have effected the only good which it conferred in this manner. We have no wish, however, to say, that every case of tic douloureux is really an inflammation of the neurilema. Our author, with a very laudable regard to unbiassed scepticism, considers them as different affections, and does not proceed to any further generalization, than simply to denominate the tic douloureux and neuralgia painful affections of the nerves of the parts diseased. He, however, admits an inflammatory action about the part, which he thinks is kept up by the primary disease of the nerve.

"It appears to me that the irritation of the nerve is the cause of the increased action of the blood-vessels; nevertheless, this increased action may tend to increase or keep up the irritation of the nerve.

"It has frequently happened, after an operation in which a nerve has been principally concerned, that, either during the healing of the wound, or after it has become completely cicatrized, if an increased action of the blood-vessels is produced, as is shewn by inflammation about the part, the painful sensations resembling tic douloureux are produced. By this I would not say that in this complaint there is an inflammation of the nerve, because I think other facts go to prove that there is not, but it shews that the increased heat and action have a decided effect in keeping up the complaint. The nerves may become enlarged from irritation, as in a case I shall relate, in the same way the muscles are from continued action; but when there has been inflammation of a nerve, though only of the chronic kind, and to which sort that of tic douloureux must bear the greatest resemblance, if it were inflammation, there would be the same change of structure that takes place in all continued inflammations of other parts of the body, viz. an enlargement from the deposit of coagulable lymph. This is shewn when there has been a chronic inflammation of the extremities of the nerves in the stump, or when the nerves have been confined to a part that has been long subject to inflammation; and if this had been the case in tic douloureux, I think it would not have passed unnoticed." pp. 43, 44.

Mr S. is much more explicit on the identity of sciatica, the *ischias nervosa of Cotunnius*, and inflammation of the neurilema; and we can assert, that it is a long time since we have had occasion to be confirmed in the correctness of this opinion by the history of several cases which we had occasion to observe and to treat.

> "In many instances of the complaint called sciatica, I believe the sciatic nerve to be the seat of the disease; the pain is generally so exactly confined to the situation of that nerve, and the adjacent parts are so free from any appearance of disease, that I believe the nerve to be the only part that suffers; and the complaint, as I conceive, is arising from an inflammatory action in the neurilema, which frequently ends in an effusion of a serous fluid." p. 67.

The opinion of Cotunnius was so decided on this head, that he asserts, that the patient can generally trace the course of the affected nerve with the truest anatomical accuracy, merely by describing the seat and direction of the pain.

"Ego interim censeo, qui a sede doloris talium ischiadicorum, atque ab ejus effectis diligenter expensis, ischiadici nervi passionem non agnoscat, fabricæ corporis humani intelligentem medicum fore neminem. Nam quod sedem doloris attinet, ea est talis, ut si velit æger ejus decursum ab osse sacro ad subjectum pedem digito commonstrare, nae ille, veluti anatomes peritissimus, succurrentis ischiadici nervi viam egregie persequatur." (Cotunnius, De Ishiade Nervosa, V.)

Yet it is curious to remark, that Cullen would have been ranked by Cotunnius in this class of observers. (First Lines, 455.)

The treatment of this disease is ably and clearly laid down by Mr S., and we are very little disposed to differ from any part of it except that of the division of the nerve. This operation we have always looked on as but a wanton and unnecessary measure, and in few cases justifying, by its result, even the moderate alarm and pain to which the patient is exposed; and, from what we have seen and known of it, we are not yet disposed to alter our opinion. We deem it greatly more scientific to combat the symptoms by antiphlogistic and evacuant remedies, which, when steadily persevered in, and continued sufficiently long, rarely fail to effect a cure. The tonic remedies, even, which have been employed, produce their effect nearly in the same way, viz. by equalizing the circulation and obviating local determinations. If, however, it shall be subsequently shown, that the division or excision of the affected portion of nerve, is a certain and efficacious cure, our minds are still open to conviction, and we shall not delay to acknowledge the superiority of the remedy.

Inflammation may terminate in various ways; it may produce effusion of lymph; ulceration; or it may induce a low chronic action accompanied with the enlargement of the nerve, or the growth of foreign bodies. The first of these effects is always found to follow wounds of nerves, and is not unfrequently succeeded by local paralysis. It is uncertain whether the neurilema or the nervous substance supplies the lymphatic exudation, but it is always accompanied with considerable uniform thickening of the part. Ulceration of nervous texture, though a rare disease, has occurred to our author, in a well marked form, in the fibular nerve of a man somewhat advanced in life, in whom a malignant fungating and painful ulcer had succeeded to an injury received from the kick of a horse. Both the fibular and the anterior tibial nerve were very much enlarged, which was evidently owing to the chronic inflammation, which was continually carried on by the irritation of the ulcer. pp. 73, 74.

A tumour, or new growth, may occur in a nervous trunk, or it may arise from the contiguous textures, and ultimately incorporate itself with the nerve. In either case nearly the same symptoms are remarked; acute and excruciating pain in the course of the chord, accompanied with occasional spasmodic twitches of the neighbouring muscles with which the nerve is connected, and subsequently loss of power and entire paralysis of these parts. The cases which Mr S. mentions seem to have been principally of the latter kind, which originated in the cellular texture so near the nerve, that it was quickly blended with the nervous substance. It seems exceedingly doubtful, whether the nervous matter has itself a tendency to the formation of these growths, or the malignant degeneration, unless we admit the fungus hæmatodes to be of this description; but although we could establish the fact that the fungus hæmatodes does occur in the nervous texture, yet we have no proof that it is the peculiar and exclusive degeneration of it, since we find at least varieties of this disease occurring in cellular membrane, serous membrane, muscle, periosteum, &c. For all these growths the remedy is uniform, excision where the part is accessible, and where the affection is not so general as to seem the result of constitutional tendency. We have had occasion to see some of these malignant productions so extensively diffused through the system, that it would have been requisite to dissect out at least one-third of the nervous chords of the body, in order to extirpate the actual disease. In such deplorable and hopeless cases, it is needless to say that the dexterity of the anatomist is unavailingly employed.

The interesting and important subject of punctured nerves, an accident which occurs daily in a very common operation, and in other less necessary circumstances, has justly claimed a large portion of our author's attention. The symptoms are abundantly well known, but the treatment seems often very little under the control of the surgeon. In one violent and severe case, after the application of a tourniquet had been unsuccessful in suspending the convulsive motions, Mr S. was fortunate enough to find that a transverse division of the affected chord completely destroyed the morbid actions. It is well known that tetanic symptoms are by no means rare after injuries of this description, and form one of the most alarming sequelae with which the practitioner has to contend. Our limits, however, will not permit us to extend our remarks on this part of the subject, further than to notice, that the author goes on to consider the effects of ligature and compression of nerves. His cases, though neither very wonderful nor uncommon, are yet very apposite, and illustrate the nature of such injuries very satisfactorily.

The experimental inquiry concerning the reproduction of the nervous texture, with which the work is concluded, is very interesting; but the subject is much too important to be considered in this place; and as we cannot do it justice at present, we shall take an early opportunity of calling the attention of our readers to it, in its own character.

The diseases of particular nerves appear to us to follow naturally those of a general nature; but Mr Swan has commenced his work with an account of the morbid affections incident to the nerves of sensation, which we think, as they are naturally more complicated, and perhaps more obscure and difficult to comprehend, might have been examined toward the conclusion of the treatise. If his remarks on this subject have anything objectionable, it is that they are much too brief and cursory, as it might be expected, that the author could not fail, if he had been a little more minute and detailed, to add materially to the stock of practical information. The observations on nervous deafness have been already before the public in the form of a paper in the Transactions of the Medico-Chirurgical Society. We are not disposed to deprive Mr Swan of the merit of noticing an anatomical fact, which, though by no means new to us, may be so to many; but we cannot avoid thinking, that as all discovery bears a relation to the actual knowledge of the discoverer, it would be well for those who claim this distinction, to be intimately acquainted with the history of the science, and to be aware of the facts which have been established by the industry of their predecessors. The truth is, that the communication between the auditory and facial nerves, which Mr Swan has announced as a discovery, was known long ago to Wrisberg, and is particularly noticed by the indefatigable Scarpa in the following terms: "Inter auditorium nervum, et communicantem faciei, peculiaria et distincta quædam filamenta a Cl. WRISBERGIO detecta occurrunt, quorum filamentarum radices tenuissimæ partim a Pontis substantia in eâ foveâ, quæ media est inter auditorium nervum et communicantem faciei, partim ab eâ sede, quæ est prope originem nervi glossopharyngei, emergunt. Duo, aliquando tria, hujus census filamenta nervum acusticum intra canalem auditorium internum comitantur; mox canalis hujus fundo proxima, ab acustico nervo abscedunt, ut communicantem faciei adeant, cujus fasciculis admixta una simul per Aquæductum Falloppii ad faciem egrediuntur."—Anatom. Disquisit. Sect. II. Cap. III. § 2.

If this passage be correctly understood, it surely gives a very clear account of the arrangement which Mr Swan has described, and which may be easily seen by making a horizontal section of the petrous portion through the superior part of the internal meatus. We speak not in this manner for the purpose of undervaluing Mr Swan's communication, but because it would be unjust to wrong anatomists so meritorious as Wrisberg and Scarpa. The remarks which Mr Swan has made on this communication between the facial and auditory nerves, though neither very new nor very original, are, however, exceedingly good; but we can see no reason for agreeing with him in the use which he has assigned to it. We do not pretend to divine the cause or the object of this communication or junction: it may be accidental, or it may be essential and necessary; but we are satisfied, from numerous trials, that the facial nerves have nothing to do with the transmission of sonorous vibrations from the face to the internal ear, when the mechanism of the tympanum is destroyed. These vibrations are most assuredly, in such circumstances, transmitted by the solid parts of the head, to the petrous portion of the temporal bone, and this we conceive to be abundantly established by the usual experiments.

Here we ought to conclude. We have exhausted, not the subject, but the patience of our readers, and perhaps we cannot expect to be listened to if we prolong our remarks. But it is impossible for us to quit a work, which is both interesting and instructive, without stating our opinion of the manner in which it has been written. We have already bestowed considerable praise on the matter and the information, and we may add, that the style is in general plain and perspicuous, but we are surprised to find marks of singular carelessness and inaccuracy of expression. It may be, indeed, said, that verbal criticism is but an humble task, and all errors of that description must be lost in the general excellence of the performance; but it is nevertheless our opinion that a work like the present would be more generally esteemed, when written with correctness, if not with elegance. There is at present such a diffusion of general literature and good taste, particularly as to expression and phraseology, that it is very unusual indeed to see any inelegant or even ungrammatical diction. We have noticed as we perused Mr Swan's work a very few of these, and we trust they are not numerous. They were not sought for, since our purpose was not to be delighted or pleased with the discovery of such inadvertencies, but to be instructed and benefited by the important nature of the information. It is impossible for the author to be displeased with the liberty which we take of suggesting to him the propriety of correcting, in a future edition, inaccuracies which blemish the one before us. We take leave of Mr Swan with recommending his work to the careful perusal of our readers.

II.

A Practical Treatise on Tropical Dysentery, more particularly as it occurs in the East Indies; illustrated by Cases and Appearances on Dissection; to which is added, A Practical Treatise on Scorbutic Dysentery, with some Facts and Observations relative to Scurvy. By R. W. Bampfield, Esq. Surgeon. Pp. 352. 8vo, London, 1819.

This is another of those practical works, of which we have recently had occasion to notice so many, from the pens of our naval and military brethren. Works of this nature, detailing the results of medical observation in remote and unhealthy quarters of the world, we have always shown a disposition to receive with peculiar respect, feeling that it would be highly unbecoming in us to animadvert with severity upon the labours of those gentlemen who, in spite of the enervating influence of a tropical climate,—amidst the bustle of a camp,—or the embarrassment of a sickly ship,—find leisure and inclination to detail observations, and record cases, which cannot fail to prove highly interesting and instructive to those who may be destined to succeed them.

With these sentiments, it will rather be our study to give a summary view of the contents of Mr Bampfield's book, than to enter into any minute criticism on his practice, the more so, as we had recently occasion to advert to this subject in our review of Dr Ballingall's Work on the Diseases of European Troops in India. Between this last mentioned author and Mr Bampfield we observe, in many instances, a coincidence of opinion.

In his introductory chapter, on the nosology of dysentery, Mr Bampfield divides it simply into an acute and chronic species. Of the first he reckons three varieties, differing chiefly in the severity of their symptoms; and the last, exhibiting "unequivocal inflammatory fever," and "acute pain of some part of the abdomen or intestinal canal, including the parts contained in the pelvis." In all these varieties, (if we rightly understand the matter,) inflammation affecting the tunics of the intestinal canal is the very essence of the disease; and the more or less marked form in which it appears will chiefly depend upon the more or less robust habit of the patient,—the greater or less extent to which he may have been exposed, to the exciting causes of the disease, whatever these may be,—and the earlier or later period at which he may have come under medical treatment. Under the second head, of Dysenteria chronica, Mr B. enumerates five varieties, which are to be looked upon as exhibiting various sequelæ of inflammation, and are, we think, chiefly distinguished from each other by the severity of the acute attack, and the extent to which the other abdominal viscera have been involved, along with the intestinal canal, in the preceding inflammation.

In detailing the symptoms of tropical dysentery, our author treats successively of those symptoms which affect the tongue and fauces, the stomach, the intestines, the liver, the urinary and genital organs; of the fever accompanying dysentery, of the derangements of the heart and vascular system, and of the affections of the nervous system; upon all which points many interesting, and, we have no doubt, accurate remarks are made.

Mr Bampfield next treats of the morbid appearances on dissection. Upon this point his own opportunities of observation do not seem to have been very extensive. At the commencement of this chapter, he gives the following summary of their appearances, and refers, in support of his remarks, to various writers on the diseases of India, and also to Dr Cleghorn, Sir J. Pringle, Dr Baillie, and Dr Donald Monro.

"The morbid appearances, which the dissection of those who have died of tropical dysentery in the East Indies generally discloses are inflammation; visceral adhesions; abscess; ulceration and mortification of the abdominal contents. It may be here observed, that in opening the abomen of those who have died of dysentery from the formation of abscess, a disagreeable gas often issues from the abdomen in considerable quantities, as soon as the peritonæum is divided; and of those who have died of mortification, an intolerably offensive smell is often emitted.

"Patients seldom die of dysentery attended with inflammation of any of the abdominal contents, without its having advanced to suppuration, ulceration, or mortification; hence, few opportunities offer of seeing the effects of simple inflammation alone; but in the dissection of those who have died of abscess or mortification, distinct inflamed patches are sometimes seen, where no abscess has formed.

"In the reflections or continuations of the peritonæum, whether mesentery or omentum, the inflamed patch or part is red, and much thicker than natural, and appears to be formed of a congeries of vessels carrying florid blood. The inflamed part is generally of a dark-red colour in the centre, and gradually losing its deeper shades, it becomes lightly florid as it recedes from the centre to the circumference or borders of the inflamed part. The inflamed part is generally thicker in the centre, and gradually decreases in thickness as it extends to the margin.

"The omentum is sometimes much thickened, and lays attached to the great curvature of the stomach, and, in highly inflammatory cases, it sometimes adheres to the peritonæum lining the parietes of the abdomen. Adhesions are also variously formed, which unite particular viscera to each other, or to the peritonæum; and, in some cases, the abdominal contents are almost all adhering together." pp. 41, 42.

In treating of the diagnosis of oriental dysentery, our author distinctly denies the contagious nature of the disease, as far as his own observation extends, but terminates his remarks on this point by the following passage, in which he admits a possibility of its becoming contagious under certain circumstances.

"The observations on diagnosis may here be terminated, by remarking, that men may be placed in situations in India, favourable to the production of typhus fever, and if dysentery should be combined with it, it is probable that this combination of disease may become contagious. Typhus fever is occasionally met with at Bencoolen, on the coast of Sumatra, and sometimes in Bengal during the cold season; it is, therefore, possible that oriental dysentery may be combined with it, and assume the contagious form. I must candidly state, that I have never met with, or as yet heard of, such a combined form of dysentery in India, as the one whose possibility of existence I have just suggested; nor have I ever seen dysentery communicated by contagion, and it would, perhaps, be more proper to consider the typhus fever as contagious, and the dysenteric symptoms as being peculiar to a variety of typhus, which might be denominated dysenteric typhus, instead of contagious dysentery. I must not omit to mention, however, that my friend, Mr A. Copland Hutchison, related to me a very striking instance, in which he found dysentery *in Europe* to be contagious, among the crew of a ship of which he was the surgeon." p. 57.

We need scarcely observe, that these sentiments are consonant to the views which most practical writers now take of this subject; and we consider the profession chiefly indebted to Dr Harty of Dublin for the first clear and distinct exposition of this point.

After a few remarks on the prognosis, our author proceeds to treat of the circumstances predisposing to dysentery, and of its remote and proximate causes. These topics give him occasion to introduce some judicious observations on the precautions necessary to be observed by Europeans on their first landing in India. Suppressed perspiration is considered by Mr Bampfield, as well as by many other writers, to be one of the principal causes of dysentery, and is often induced in India by lying exposed to currents of wind and noxious night-dews.

"Those who lay off in ships, or reside or encamp near the mouths or courses of great rivers, that, at particular seasons, inundate the adjacent country by irruptions over their banks, are subject to dysentery, more especially during the periods that the waters exhale.

"When we lay off the mouths of the Guadavery, at Coringa Bay, on the coast of Coromandel, in June 1808, the night dews from the marshes were heavy and cold, and several very severe cases of dysentery occurred.

"Dysentery is frequently met with among Europeans who are on shipboard in those situations where the stream, or the waters of a river are diverted from their natural channel at high water, for the purpose of irrigating the neighbouring paddy fields, as in various parts of the Hooghley in Bengal; at Whampoa, in China; the second bar; and along the whole course of the river of Canton. It is observed, that the night exhalations or dews in these situations are cold and heavy.

"Dysentery is prevalent on the coast and shores of woody and uncultivated countries, as on the coast of Sumatra, where it is reported, from an actual register, that 365 showers of rain fall annually, and where the land-winds at night blow over the shores and towns, charged with the damp and noxious vapours arising from situations and soil in the interior, so shaded by woods and tangled thickets that the sun never penetrates them.

"In situations such as those described in the preceding paragraphs, thick dews generally arise in the night, and precipitate in considerable quantities; hence, if any Europeans are imprudently exposed to them, especially if the perspirative vessels have been previously excited to inordinate action by spirituous liquors, or violent exercise, it is not difficult to understand, in what manner they become the cause of checked perspiration." pp. 80, 81.

At page 83 he observes,

"Dysentery was most prevalent among the Belliqueux's people, at the Cape of Good Hope, in the month of January 1806, one of the summer months in the southern hemisphere, when it was hot by day, when the winds blew fresh and strong from the Table mountain, and the night dews were heavy; at Madras in the months of April and May 1806, on our first arrival in India; at Trincomalee in October 1806, during the rainy season; in the China seas in August 1807, when we experienced severe gales of wind and much rain; at Malacca and Prince of Wales's Island during the rainy months of October and November; in Coringa Bay in June 1808, as already mentioned; at Bombay, and on the coast of Malabar, during the rainy months of May, June, July, and August, 1809; in China during the winter months, from November to February, and March, 1810, 1811; and of all these situations, at the periods mentioned, I consider Bombay and the coast of Malabar, during the rainy season, the most productive of dysentery: but Bengal and the banks of the Hooghley are said to be equally unhealthy at this season." p. 83.

After a few observations on the proximate cause of dysentery, and on some peculiar phenomena of the disease, our author proceeds to the mode of cure: and here we can only afford room to follow him in his remarks upon blood-letting, and on the use of mercury. These are two of the most important remedies used in the treatment of visceral disease in India. The one we wish to see employed to a greater extent, and the other used with more discrimination. Mr B., as might be supposed from the view he takes of the nature of the disease, is a strenuous advocate for blood-letting.

"From the history and explanation of the symptoms, causes, and consequences of this disease, the reader will hardly be prepared to learn, that the propriety of bleeding in tropical dysentery should be questioned; that a large portion of medical practitioners in both Indies not only discountenance the practice, but have never employed the remedy; and influenced by their opinion and long established practice or usage, many of the old European inhabitants are prejudiced strongly against it. Hence, its recommendation must rest on its merits and utility, and its employment be sanctioned only by its efficacy.

“ The lancet, in the hands of the intelligent surgeon, “ is the first best gift that heaven bestows;” and by its prudent employment, he can often truly boast of preserving the life of a fellow-creature, and of obtaining a triumphal victory over an inflammatory disease.

“ I am able to prove its utility in tropical dysentery by the cases annexed; and I hope to vindicate the principles on which it is employed, by establishing a particular identity of some symptoms in dysentery and enteritis, which are characteristic of intestinal inflammation, and a further analogy between it and inflammation of other viscera possessed of secreting membranes, whose peculiar functions differ from the intestines. A similarity in some of the effects of diseased action in dysentery and enteritis has been noticed at page 97, and the general and strict analogy between the symptoms and effects of dysentery, and other inflammations, has been pointed out in Chap. VII. To these I have further resemblances to add.” pp. 101, 102.

“ A strict and early attention to bleeding, and the antiphlogistic regimen, is more particularly indispensable and necessary in the inflammatory diseases of hot and tropical climates, than of the temperate zones; for inflammation advances with more active rapidity to suppuration and mortification in a hot, than it does in a temperate climate; and, consequently, gives less time to the practitioner to suspend or arrest its progress, and counteract its effects. This observation has been made by Dr Lind, (*On Diseases of Hot Climates*,) and the fact must be acknowledged by every experienced tropical practitioner. The disease is not easily conducted to the termination by resolution in a tropical climate, without judgment in the choice, and promptitude in the administration, of remedies; “ principiis obsta” should be the maxim; and resolution should be accomplished in twenty-four or forty-eight hours, or it may be justly apprehended, that the proper period for its attainment will, in many cases, have past. I have seen suppuration completed in inflammations of external parts in twenty-four hours, and many cases of dysentery terminated fatally from the second to the fourth and seventh day, before I employed venesection, as the principal agent in my practice in inflammatory cases. Mr Christie relates, that two “ highly inflammatory cases terminated fatally on the fourth and fifth day.” pp. 107, 108.

“ I am fully persuaded, that death will not only be a less common consequence of dysentery, if bleeding be more frequently employed; but that we shall not hear of so many dissections, which disclose abscesses of the liver, intestinal investments, and epiploon, ulceration, and other consequences of inflammation.

“ Venesection can be dispensed with in the milder and safer forms of dysentery, where the symptoms of inflammation are not present, where the pain is only occasional, and the evacuations are not copious or frequent; these varieties will, in general, yield to the other remedies employed for the cure of dysentery.” p. 113.

Had our limits permitted, we should have quoted the whole of the section on bleeding, as our author appears to have urged the propriety of this evacuation with much effect. He concludes by the following remarks on the sweeping condemnation of this remedy by Dr Maclean:

> "Since this work has been in the press, I have been astonished and shocked to find blood-letting in hot climates condemned "as *a pernicious error;*" as a *deleterious practice,* and as "*an evacuation injurious in all diseases,*" by *Dr C. Maclean, Lecturer on Diseases of Hot Climates to the Hon. East India Company,* who declares, "That blood-letting is an operation which ought *never, under any circumstance, or in any situation,* to be performed," and that his "Observations were almost all written a *great many years ago,* in the East Indies!!!—*See Results of an Investigation, &c.* Vol. II. *preface* xi. Surely, with these sentiments, Dr C. Maclean cannot have tried it, and, with every deference, I submit to him the "Results" of the cases annexed to this work." pp. 114, 115.

Before quitting this subject, we beg to advert to a passage in our author's preface, where, in speaking of Dr Ballingall's Observations on the Indian Dysentery, he insinuates that, if that gentleman had carried blood-letting to a greater extent, he would not have had to boast of having dissected 100 subjects who died of this disease. Now we happen to know, from the best possible authority, (the surgeon of the regiment in which Mr Ballingall served,) that, from the nature of his education, as assistant to Dr Barclay, the task of opening the bodies of patients frequently devolved upon him, where he had nothing whatever to do with their previous treatment, and where, of course, it would be highly unjust to hold him in any degree responsible for the issue.

After treating of cathartics and diaphoretics, of which the latter class of medicines is not so great a favourite with our author as with many preceding writers, he goes on to speak of the use of mercurial preparations. This section he introduces by observing,

> "The preparations of mercury have their peculiar effects in the cure of dysentery, and are admitted, by general acknowledgment and universal experience, to be highly useful and important remedies; but I do not coincide with (because experience will not support) the opinion of those who concede to them the exclusive power of curing dysentery.
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> "In my remark book, it is observed, that more than fifteen months had elapsed after my arrival in the East Indies, before one fatal case occurred, in the course of which ptyalism had been fully induced and supported. This fact demonstrates the great utility of mercurial preparations; but it very naturally struck my observation, and became

impressed on my mind, that the cases of fatal issue terminated so soon, in general, that time was not granted to excite ptyalism; and, in fatal cases of longer duration, it was strikingly remarkable, that the salivary glands obstinately resisted the action of mercury. A coppery or metallic taste, or mercurial fetor might be perceived; the gums might be white; or a tenderness and soreness of the salivary glands, throat, and mouth, were felt and complained of; but the most diligent and copious continued use of mercury in varied forms, would not induce a free, or in some cases, even the slightest salivation. These facts evidently pointed out, that other remedies were necessary, and that mercury alone should not be trusted to. Hence the necessity of previous bleeding and purging in the inflammatory variety; for when high inflammation is subdued by them, no obstacle will oppose the induction of mercurial irritation, and its beneficial consequences; besides, mercurial irritation often excites general increased action of the heart and arteries, and would, consequently, be injurious, if active inflammation have not in some degree subsided before its induction; and thus Robert Woodcock died suddenly, from abscess, on the day his mouth became sore." pp. 134, 135.

After some observations on the different preparations of mercury, we have some judicious remarks on the effects of ptyalism.

"One important effect of salivation," he observes, "is such a state of soreness, excoriation, or ulceration of the gums, tongue, and cuticular lining of the mouth, as prevents the patient from masticating any animal or other food, that is so hard and solid as to require mastication, and his diet must, from necessity, consist of mild food of thin consistence and of easy digestion, such as congee, arrow-root, sago, panada, gruels, and broths or soups. It is observed, that, during this period, the bowels become easy, and are seldom disordered; the quantity of pus, mucus, serum, or blood, is diminished gradually, or their secretion or discharge subsides, is suspended, or ceases altogether. The intestines also, during this period, are, in fact, kept in a state of comparative quiescence; the feces are less stimulating, and yellow, as in health; the function of transmitting them is but gently exercised; and this state must necessarily favour their recovery from the injuries they have sustained. From this beneficial effect of low and mild diet, arising from the natural necessity of circumstances, may be deduced the wise maxim of keeping the patient on the same diet after ptyalism has ceased, until the bowels become nearly or wholly regular, and the blood, pus, and mucus, have disappeared from the evacuations, or are very greatly diminished.

"After having expatiated on the advantages of salivation, it may be inquired, if it be always a necessary condition in the cure of dysentery. This has been in part answered by an observation, that the various varieties of dysentery sometime yield to cathartics alone, or in conjunction with bleeding and diaphoretics. In such favourable cases, it is not necessary to excite salivation. But should not the remedies just alluded to succeed, the hydrargyri submurias, or any other mercurial preparation already in the course of employment, should be persisted in, with the ultimate view of exciting salivation; yet it is not a necessary condition then; for should the diseased symptoms yield, and the morbid secretions cease during its administration, before it has excited salivation, the use of mercurials should be desisted from; but if the disease should not yield to the previous remedies, nor to mercurials, during their exhibition, before ptyalism is produced, then salivation becomes a necessary condition, and mercurials should be persisted in, until it be moderately excited and maintained." pp. 147, 148.

Several of the following sections of Mr Bampfield's work are occupied with observations on the treatment of the different varieties of chronic dysentery; and here our author details some interesting cases in which he was concerned, and points out the necessity of a most guarded attention to diet and regimen in these protracted forms of the complaint.

Subjoined to these observations on the disease as it occurs in India, we have some observations on dysentery as it appears amongst seamen tainted with scurvy. This is a most deplorable form of disease, and we feel most sincerely for the surgeon in whose ship this evil prevails, but fortunately the improvements introduced into the naval department render it now a rare occurrence. In this section of the work, Mr Bampfield introduces a tabular view, exhibiting several circumstances of the disease.

"The most remarkable fact in the table is the disparity in the number of deaths, in the years 1807 and 1809; eleven having died out of twenty-six in the former, and only one out of twenty in the latter year, which is to be accounted for by the following circumstances:—In 1807, lime-juice was not allowed in India for daily issue at sea to the ship's company, and the quantity in my charge did not admit of more than two or three ounces to be given to the worst cases daily. I had not a stock of pickles or vegetables, or any other antiscorbutics, to give a temporary check to its progress; the people were longer affected with it from the longer duration of the cruize; they had not the advantage of obtaining refreshments from such an Island as Roderique; and several died of the disease at sea." pp. 341, 342.

We now conclude these cursory remarks on Mr Bampfield's essay, by observing that, in all the works of this description which we have recently had occasion to peruse, we think we perceive a gradual approach to European principles and European practice in the treatment of tropical diseases; the lancet is becoming more fashionable and mercury less so. No one, we presume, will accuse us of entertaining those bigotted prejudices against mercury, which are disseminated by some practitioners of the present day; but if in any instance we are inclined to differ from Mr Bampfield, it is in the extent to which he urges the use of this remedy; he is perhaps, in this respect, still too much of an Indian.

We are persuaded, however, that, by the publication of the present essay, Mr B. has done an acceptable service to those young men destined to practise in tropical regions; and to all works of this nature, we feel that a double share of commendation is due,—convinced, that if there is any class of medical officers in the service of the state, more likely than another to treat their patients with increased attention, humanity, and skill, it is those who prescribe to themselves the task of detailing their practice for the perusal and instruction of others, and who thus act, as it were, under a degree of self-imposed responsibility.

III.

Practical Observations on the Colchicum Autumnale, as a General Remedy of great power, in the Treatment of Inflammatory Diseases, both Acute and Chronic; and therefore as a Substitute for Bleeding, in Disorders which are connected with increased action of the Heart and Arteries. By CHARLES THOMAS HADEN, Surgeon, &c. 8vo, London, 1820. pp. 84.

THE use of the colchicum autumnale, in the manner pointed out by Mr Haden, is certainly new, in so far as he recommends it as a remedy possessed of considerable power in overcoming inflammatory action, so as to become an useful auxiliary to the lancet, and in some instances of peculiar idiosyncrasy to supersede its use. In the form of vinous tincture it has been long employed in diseases of a chronic form, and, so far as we have observed, with beneficial effects. In gout and rheumatism, more especially, some practitioners have thought it a specific, and in these two diseases it certainly must be allowed to have a decidedly beneficial operation, removing the symptoms in a very short time. Mr Haden has not confined the use of colchicum to subacute or chronic complaints, but has extended its use to all diseases of excitement, and has even pushed it in cases, in which we have hitherto thought it might be followed by doubtful if not dangerous effects.

It is foreign to our present purpose, which is merely to give an analysis of the effects of the colchicum in those diseases pointed out in the work, to enter on the author's speculations in what manner blood-letting operates in subduing inflammation, although we by no means agree with his reasoning on this particular point. This is of less consequence, as in whatever way the operation of any remedy is to be explained, its effect upon the system, when labouring under disease, is of more importance in a practical point of view.

After a few observations on the effects of colchicum on the constitution, our author observes,

> "Certain it is, however, that in the author's practice it has proved a remedy of eminent power, in controlling the action of the heart and arteries; and in curing those states of the constitution which we are taught to name diseases of excitement, and as such, it is offered to the notice of the profession.
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> "In offering these observations on the use of colchicum, I have two duties to perform; the one to give the result of my own experience, the other to do justice to the claims of another. My father, who has practised for nearly forty years in Derby, began the use of colchicum in gout some years ago, at the time Mr Want published his first paper on the subject. At this period, he gave from a drachm to a drachm and a half of Mr Want's tincture, without further mixture, in cases of gout; but finding that forty-eight hours frequently elapsed before the purgative operation of the medicine was produced, and as that operation also was often violent, especially when a repetition of the first dose was required, he began to give the common purging mixture with the colchicum. Under this mode of exhibition he found the beneficial effects of the colchicum to follow more quickly, and to be equally decided as when the purging was produced by colchicum alone. He then extended the use of the remedy from gout to rheumatism, and from the latter to the treatment of cases of inflammation in general, but finding that violent effects sometimes arose from the use of the tincture, he tried the remedy in the form of powder, and as it appeared that it was more manageable in this form, and was, at the same time, quite as certain in its operation, he continued to use it almost exclusively, and has now, for more than six years, employed a combination of powdered colchicum and opening medicine as his common prescription in all diseases of excitement." pp. 6, 7.

Mr Haden then gives several cases of acute disease which occurred in his father's practice, and which were all successfully treated by the colchicum.

> "If it be given," he says, "every four hours, until it produce an abundant purgative effect, the pulse will become nearly natu-

ral, from being either quick and hard, or slow and full. This frequently happens even before purging has taken place, and the effect is so certain, that I never bleed unless inflammation exists to an alarming degree in a vital part, and then never more than once. Fevers and inflammations so removed never require the use of tonic medicines during convalescence; the patients, indeed, generally appear to be as well as though they had not been at all the subjects of disease; and although it sometimes happens that a recurrence of symptoms takes place, it is in a much milder degree, and the new disorder is always immediately removed in a few hours, by a very little use of the same treatment."

Mr Haden then gives the result of his own practice. In page 24, a case of acute rheumatism is related, in which the colchicum was employed, but, in this instance, it was ineffectual in removing the disease till bleeding was premised, after which the remedy was given with decided benefit. It is seldom that the very severe form of fever which accompanies acute rheumatism can be subdued by any remedy short of copious blood-lettings, indeed, we should not wish to see a smart attack allowed to proceed when we are possessed of means so efficient to arrest its progress. Colchicum, we allow, may be employed with great benefit after copious blood-letting, or may be trusted to alone in cases where the action of the heart and arteries is moderate, and in those chronic forms of the disease which frequently succeed to the acute in elderly people.

"Miss T., aged 12, had suffered from a hard teazing cough for many weeks, when it increased considerably; great irritation of the larynx, and considerable fever came on. These symptoms were not treated very decidedly, so that at the end of a fortnight, on October 10th, 1820, her pulse was found to have risen to 130 in the minute, and was hard; her cough was dry and constant; she could not fill her chest with air; her skin was very hot, and her face was flushed.

"Under these circumstances, as she had from childhood been of a weakly habit, and was troubled by enlarged glands in the neck, her case was considered to be very dangerous; inasmuch as it was feared, that phthisis had already made considerable advances in her constitution. Four grains of colchicum powder, and two scruples of sulphat of potash, were given four times in the twenty-four hours, and the assistance of a physician was requested. On the next day and the day following, no material change took place. The medicine, however, by favour of the physician, was continued; and as the bowels had not been moved, three grains of calomel and two of aloes were given, in addition, at bed-time. It may be necessary here to state, that the disease might have hitherto been in some degree kept up, by the patient having indulged her appetite more largely with the vegetable food, that was allowed, than was proper.

"On the 4th day, a great change had taken place; the bowels had acted copiously, and all the symptoms were relieved; so that on the 5th day her pulse was reduced to 80, and on the 6th, to 72 beats in a minute;—the bowels having acted fully every day. She had been in bed for the four preceding days, but was now permitted to sit up for a few hours in the afternoon; only half the quantity of colchicum was now given, and in two days after, it was left off altogether.

"October 26th.—This young lady has continued to improve. Her tongue is quite clean, and has been so, since the full operation of the colchicum; her cough is very nearly gone, and she feels quite well; but on account of the delicacy of her constitution, and the other circumstances of the case, it is determined that she shall keep wholly in a warm atmosphere during the next winter.

"It is right to state, that the physician's fears of consumption being far advanced, were, in the first instance, equally strong with those of the writer, or perhaps stronger." pp. 40—42.

Our author, page 48, gives a case of pneumonia which was treated by the colchicum.

"Mrs H. a laundress, aged 30, took cold on October the 1st, 1820; and it would appear, from her account, that her symptoms were those of pneumonia. She, however, continued her usual avocations as far as she was able; and although her appetite did not allow her to take much food, she drank her usual quantity of porter every day. On the 17th day of her disease, I was called in, and found her labouring for breath, suffering much from cough, and distressed by symptoms of violent fever; her pulse was 120, and hard, and her skin was very hot. Five grains of colchicum powder, and a drachm of sulphat of potash, were ordered to be taken every six hours.

"18th day.—The symptoms were very little altered, and the medicine was continued.

"19th day.—There was, if any thing, an aggravation of symptoms; indeed her state was such, as to have peremptorily demanded the use of the lancet, under ordinary circumstances; especially, as the bowels had been copiously acted on by the seven doses which the patient had taken. However, a pill, containing three grains of powdered colchicum, was ordered to be taken three hours after each dose of the powders; when, on the 20th day, she felt much more comfortable in all respects, and on the 21st, every symptom was materially relieved. Her pulse was 100, and small; her breathing was 30 in the minute, that is, 18 less than on the 19th; her skin was cool; she had slept all night; and she felt almost well. During the last two days, the bowels had been very frequently and severely acted on; and, therefore, as she had, in that time, taken six doses of the pills, and as many of the powders, she was directed to take only two doses of each, during the next twenty-four hours: and not that if the purging continued. It was very satisfactory to see how much the complexion, the colour of the lips, and the general appearance of the patient, as to health, had improved during the last two days; indeed, a medical friend who saw her on that day, because the amendment had been so remarkable, would scarcely believe that she had been so ill; indeed, he found her in the street. Smaller doses of colchicum were ordered, and on October 26th, she was really well, her pulse being 76, although she had walked quickly down stairs, and she said her strength would permit her to walk to town with ease, if it were necessary.

“ The remark will be excused, that the quantity of strength remaining to the patient, after the subsidence of this severe affection, was very different from what it would have been, if the cure had been performed by bleeding.” pp. 48—50.

In this case, the power of the colchicum in subduing diseases of excitement is more decidedly marked than in any other our author has detailed. Still, however, we confess, Mr Haden evinced more confidence in his favourite remedy than we could have felt ourselves warranted to give it. Although he hazarded too much, the case terminated favourably, certainly from the beneficial action of the colchicum, although we should by no means recommend its exclusive use in so formidable a disease. Would not the bleeding the author alludes to have cut short the severity of the symptoms, and aided the colchicum in subduing the disease?

Mr Haden, in the subsequent part of his book, gives the detail of several cases illustrative of the good effects of the remedy, and to which we must refer our readers who are anxious to make a trial of it. The cases of threatening laryngeal inflammation, which occurred in the author's children, will be read with peculiar interest. With regard to the mode of exhibition, it may be necessary to point out the plan recommended in the work.

The ordinary form is a powder, composed of one part of powdered colchicum, three of carbonate of potash, and five of sulphate of potash. Of this powder, one drachm is to be taken three or four times a-day, in half a pint (fl. ℥iv.) of warm water, in the state of effervescence with tartaric or citric acid. To this is sometimes added a dose of calomel at night; and when the bowels are not freely moved before the second or third day, and the disease is violent, salts and infusion of senna to quicken its operation; but, in very violent cases, more colchicum is required, whilst no more purgative medicine can be borne, and then pills of colchicum only, as in the case of pneumonia, detailed page 48, are given between the doses of the powders. In violent cases, pills of calomel, with from five to eight or ten grains of colchicum are given in the first instance, to be followed by the powders as directed above.

In chronic complaints, a small dose of calomel, or blue pill and aloes, with two or three grains of ipecacuanha, is usually given at bed-time, every night, and one or two of the drachm powders in the day.

In children, and weakly subjects, the dose of the compound powder, in all cases, varies from sixteen grains to two scruples, so as to give from two to five or six grains of the colchicum, the full drachm containing about seven grains.

We certainly think this remedy entitled to a cautious trial, and have no doubt it will prove useful in subduing diseases of excitement, but still more so in those of a subacute or chronic nature. Still we must caution our readers to watch its effects, as we have known very unpleasant symptoms follow its use, when the medicine, from peculiarities which occur in the use of more simple remedies, seems to have disagreed with the patient. Much depends on the attention which is given to the preparation and drying of the plant; indeed, it would add much to the security of the public, as well as to the certainty of the operation of remedies prescribed by the physician, that adulteration of medicines could be more effectually obviated.

IV.

Versuche ueber die Wege, auf welchen Substanzen aus dem Magen und Darmkanal ins Blut gelangen; ueber die Verrichtung der Milz und die geheimen Harn-Wege. Von T. Tiedemann und L. Gmelin, Professoren in Heidelberg. Pp. 119, 8vo. Heidelberg, 1820.

This is a work of no common merit. It contains an account of an able investigation of some of the most interesting questions in physiology; and the results are so clearly stated, that, in the following article, we have had nothing more to do than to select, translate, and connect the various results as given by the authors themselves.

The question, which some physiologists have again agitated, whether there are any other means of communication than that of the *thoracic duct*, by which nourishment and medicines can pass from the intestinal canal into the mass of the blood, is of equal importance, both to physiology and the art of healing. To answer it new experiments were required; for the grounds on which physiologists have stated that absorption takes place by the roots of the vena portæ, render it only probable, and cannot be regarded as proving it. To ascertain the fact, Professors Tiedemann and Gmelin resolved on instituting a set of experiments with carnivorous and graminivorous animals, namely, dogs and horses.

In these experiments the animals had different substances given to them, the presence of which might be easily known by their colour, their smell, or by some chemical qualities. The chyle of the thoracic duct and of the lacteal vessels, the blood of the mesenteric veins, of the splenic vein, and of the vena portæ, as well as of other blood-vessels, were taken out and chemically examined. The chyle was then compared with the blood taken from these different sources, and the different kinds of blood were compared with one another, in order to answer the following questions:

1. What substances are taken up from the intestinal canal, and poured by the lacteals into the thoracic duct?

2. Do certain substances appear simultaneously in the thoracic duct and in the blood of the mesenteric veins, of the splenic vein, and of the vena portæ?

3. Do certain substances appear only in the blood of the vessels connected with the vena portæ, and not at all in the chyle of the thoracic duct?

In the course of these experiments our authors were led to inquire into the functions of the spleen, and into the supposed secret passages of the urine, which, at the beginning of their experiments, they had no intention of doing.

The series of experiments was made in the presence of the most distinguished pupils of the School of Heidelberg. In the valuable volume before us they are first described singly in detail, and afterwards the various conclusions derived from them are analytically stated.

The experiments are apparently only sixteen in number, but in reality much more numerous, as various substances remarkable for their smell, taste, colour, or chemical action, were given to the same animal, and at various periods before it was killed to ascertain the results.

The first set of conclusions indicates the places of the alimentary canal, in which the various substances given by the mouth were found after death. The object was, to ascertain the quantity of them successively absorbed in the stomach, duodenum, and other portions of the gut; and in this respect the results relating to odorous, colouring, and saline substances, are separately stated.

The odorous substances employed were camphor, musk, alcohol, oil of turpentine, garlic, and asafœtida; and it appears from the experiments that these substances gradually disappeared in the small intestines, while, on the contrary, colouring substances, even where they were given at the same time, were found farther down in the intestinal canal. The opinion of those physiologists who assume that alcohol is totally absorbed in the stomach, is wrong; for, in these experiments, it was still observed in the small intestines.

The colouring substances given were indigo, sap-green, gamboge, madder, rhubarb, alkanet, and tincture of litmus, and these observations show that several colouring substances, namely, indigo, madder, rhubarb, and gamboge, are not destroyed, either in the stomach or in the intestinal canal, and that the greater part of them passes off with the excrement. Portions of these substances which are absorbed from the intestinal canal, were again detected by their peculiar colour in the urine, but not in the chyle of the lacteals, or of the thoracic duct; they appeared, on the contrary, in the serum of the blood of the vena portæ.

It is worthy of remark, that the tincture of litmus and of alkanet became red in the stomach and intestinal canal, which therefore proves the predominating acid property of the gastric juice, denied by several eminent physiologists. In numerous experiments on the properties of the gastric juice of dogs, cats, rabbits, and horses, our authors have repeatedly found that it acts like an acid. The chyme, when transferred into the duodenum, also displayed acidity, and coloured tincture of litmus red. On passing further on through the small intestines, its acidity gradually disappeared. It is, however, remarkable, that the liquid which is plentifully separated in the *intestinum cæcum* coloured the tincture of litmus red. This intestine appears therefore to supply the place of a stomach, in which the portion of the food not dissolved in the stomach and intestinal canal is again mixed with an acid solvent, to effect its perfect liquidity and solution. The fluid separated in the gizzards of fowls has the same effect. According to the experiments of our authors, it colours tincture of litmus red. The gastric juice of frogs does the same. It results from chemical experiments on the nature of the gastric juice, in which our authors are still engaged, that in this substance there are two different acids, one volatile and the other fixed. The former is probably the acetic acid, the latter the acid of milk.

The salts employed were prussiate of potass, sulphuro prussiate of potass, muriate of barytes, muriate and sulphate of iron, acetate of lead, acetate and prussiate of quicksilver. A great portion of these earthy and metallic salts appears to pass off with the feces; different salts of this kind, when absorbed, show themselves in the urine; a very few are met with in the chyle of the thoracic duct; several, however, are found in the blood of the mesenteric veins, and of the vena portæ.

The next set of conclusions relates to the passage of various substances into the chyle, as ascertained by the examination of the chyle taken from the lacteals and thoracic duct.

The colouring substances given to the animals never passed, as such, into the chyle of the thoracic duct, for our authors could not in any one experiment detect their presence, either by their colour or by the aid of chemical tests. Neither did they ever show themselves in the lacteals, or in the chyle taken from them.

These results contradict several of the results of the experiments of the older physiologists. Martin Lister * and Musgrave † said, that in their experiments on dogs, they found, after giving indigo, the chyle of the thoracic duct, or of the lacteals, coloured blue. Baller, Gould, and Foelix, pretend to have seen the same thing. Even in J. Hunter's experiments, colouring substances are said to have passed from the intestinal canal into the absorbents. Haller ‡ and Blumenbach, § who repeated Lister's and Musgrave's experiments with indigo, affirm they obtained the same results. Viridet ‖ and Mattei are even of opinion that the chyle of the thoracic duct was coloured yellow after they had fed animals on the yolk of eggs, and red after feeding them on beet root. But Hallé, ¶ who made many experiments on dogs, in order to ascertain if the chyle of the thoracic duct was coloured by matters mixed with the food, never perceived any change of colour effected in this way. Neither could Magendie ** observe any such change in the chyle of dogs, to which he had given indigo, rhubarb, madder, and saffron.

Our authors, therefore, express doubts as to the experiments made by the older physiologists, and think it probable either that they were not sufficiently cautious and correct in performing their experiments, or that they suffer themselves to be deceived.

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* Philosophical Transactions for the year 1701, p. 819.

† Ibid. p. 996.

‡ Elem. Physiol. T. VII. p. 62.

§ Instit. Physiol. p. 357.

‖ Tractat. Med. Phys. de Prima Coctione, p. 280.

¶ Fourcroy, Systeme des Connaiss. Chim. T. X. p. 66.

** Physiol. T. 2. p. 157.

Smelling substances, like the colouring matters, were not observed in the chyle, either of the thoracic duct, or of the absorbents of the intestinal canal. Dumas, Magendie, and Flandrin, who also gave animals odoriferous substances, such as camphor, alcohol, and asafoetida, were never able to observe the smell of any of these substances in the chyle of the thoracic duct.

In regard to saline substances the result was not uniform. Lead, mercury, baryta, were not found in the chyle in any of the experiments in which they were employed. In the chyle of a horse which had got sulphate of iron, some iron was detected, but none in that of two dogs which got the muriate and sulphate. Prussiate of potass occurred in the chyle of one dog but not in that of another; and sulphuro-prussiate of potass appeared in the chyle of a dog to which it was given.

Perhaps it may be objected to these experiments, that the colouring, smelling, and saline substances given to the animals, were actually taken up by the lacteals, and already poured into the blood-vessels through the thoracic duct, and, consequently, at the time when the chyle was examined, they were no longer to be found in it. This objection can have no weight; for in every case there was found in the stomachs and intestinal canals of the animals, when killed, abundance of these substances, which was consequently still exposed to the action of the lacteals.

On the whole, it follows that the lacteals chiefly take up the digested and dissolved portions of alimentary matters, and convey them as chyle through the thoracic duct to the blood-vessels. Smelling and colouring substances are not absorbed by them. Saline and metallic substances appear to be taken up by the lacteals only as an exception to the general rule; nor does the occurrence of saline substances in the chyle of the thoracic duct prove that they were taken up by the lacteals, for they might have been absorbed from the secreted urine, in which they soon show themselves.

But as it is a fact, that several colouring matters, such as indigo, rhubarb, madder, and gamboge, appear in secreted fluids,—for example, in the urine; and that smelling substances, such as camphor, musk, garlic, and others, which are taken into the stomach and intestinal canal, impart their smell to the exhalation from the skin and the lungs, we are immediately forced to conclude, that there must be some other way than the thoracic duct, by which substances pass from the intestinal canal into the mass of the blood, and from this into the secretory organs.

The next set of conclusions relate to the vital phenomena of the thoracic duct and lymphatics.

The thoracic duct possesses a living contractile power; for when it is tied and punctured, the chyle springs out like the blood from an opened vein. This appearance is not a consequence of the mere elasticity of the sides of the duct, as Mascagni, Bichat, and others supposed, but is the effect of a living contractile power. This is evident, because, in a certain time after death, the chyle does not spout out of the thoracic duct when tied and pierced, but merely exudes from it. It therefore follows, that the reaction of the sides of the thoracic duct, on the fluid it contains, depends on life, and disappears soon after death. The same phenomena were observed in the absorbent vessels of the intestinal canal, in those of the thigh, loins, and other parts. Immediately after the death of the animal, the chyle and lymph spouted out of these vessels when they were punctured. Some time after death, however, the liquor they contained merely exuded from them.

Several physiologists explain this appearance, by supposing that the sides of the absorbents possess irritability. This opinion is in some measure supported by the visible contraction of the thoracic duct, and other absorbents, when exposed to the effect of the air. In opposition to this, however, it is remarked by our authors, that in these and other experiments formerly made, they never could perceive any contraction of the absorbents, when exposed to mechanical or chemical exciting causes, as happens with muscular substances. Sulphuric acid alone, when applied to absorbents laid bare, causes a contraction, as it does in arteries and veins; but it is doubtful, however, if this phenomenon be not the consequence of a chemical action on the coats of the vessels; for absorbents, arteries, and veins, which our authors had preserved in spirit of wine for a year, visibly contracted in the same manner, on the application of sulphuric acid.

Our authors, therefore, think themselves justified in ascribing to the absorbents, arteries, and veins, and also to the excretory ducts of several glands, a living contractile power, different from irritability, by which the fluids they contain, such as the chyle, the lymph, the blood, and the fluids secreted from it, are propelled. These fluids keep the vessels in a forced state of extension, and the living contractile power of the coats of the vessel re-acts on the fluid, and propels it forward. Dr

Tiedemann informs us in a note, that he will explain himself more fully on this subject in a separate treatise, intended to contain the experiments which he has made on the manifestations of life in the arteries and veins of animals.

The fourth set of results relate to the observations made on the blood. The blood of the mesenteric veins was in some cases found to smell of the odorous substances taken into the stomach; thus of camphor in one horse, and somewhat of musk in another. The serum of the blood taken from the mesenteric vein of a horse, which had got a good deal of indigo, was of a dark yellowish green, and in that of a dog rhubarb seemed to be present. Salts given were often discovered in the blood of the mesenteric veins, as prussiate of potass, sulphuro-prussiate of potass, traces of lead and iron.

The blood of the splenic veins was the next subject of investigation. Our authors here remark at the outset, that they have not found the statement of Senac, Roloff, Hartmann, Haller, and others, that this blood does not coagulate, in any way confirmed. In all the experiments of our authors in which blood was taken from the trunk of the splenic vein, they saw it, when exposed to the action of atmospheric air, coagulate and separate into serum, and into crassamentum, containing red particles, and sinking to the bottom, like other venous blood. They therefore entirely disregard the consequence which has been deduced from the above supposed property of the splenic blood, viz. that it was of essential service in secreting the bile, and they ascribe to the splenic blood no other part in this secretion than what may arise from its being poured into the trunk of the vena portæ and augmenting the mass of the blood from which the secretion of the bile chiefly takes place.

As several of the substances given to the animals appeared in the blood of the trunk of the splenic vein, which were not detected in the chyle of the thoracic duct, some physiologists may be disposed to regard this circumstance as a proof of Sir Everard Home's * former opinion, that substances are taken up in the cardiac portion of the stomach, conveyed into the spleen, and there mixed with the blood. But, without taking into account that Sir Everard retracted this opinion in consequence of his later experiments, † they observe, in opposition to it, that, in several of their experiments, precisely the same substances were found in blood taken from the coronary veins of the stomach, and from the trunk of the splenic vein. It is, therefore, pro-

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* Philos. Transact. for the year 1807, p. 45.

† Ibid. for 1811. P. I. p. 163.

bable, that the veins of the stomach generally, and consequently, also, the veins corresponding to the *vasa brevia*, which communicate with the trunk of the splenic vein, take up substances in the stomach, and in this way the presence of these same substances in the blood of the splenic vein is to be explained.

In the blood of the *vena portæ* our authors detected odorous substances, as camphor, animal empyreumatic oil, and musk, indigo, rhubarb, prussiate of potass, sulphuro-prussiate of potass, iron, lead, and baryta, either decidedly, or, at least, traces of them, and they observed commonly in the blood of the vena portæ, both of dogs and horses, white chyle-like streaks.

From the fact of various substances being found in blood, taken from the different mentioned veins, and not making, in general, according to these experiments, their appearance in the chyle of the thoracic duct, it follows, that this duct is not the only and exclusive channel by which substances pass from the stomach into the blood. Since colouring, smelling, and saline substances pass from the stomach and intestinal canal into the vena portæ, it is necessary to inquire by what way or passage this is effected, and the following are the only suppositions which can be made: Either all the lacteals do not enter the thoracic duct, and part of them joins the veins which, by their union, form the vena portæ, and through these substances absorbed from the stomach pass into the blood of the vena portæ; or substances pass directly from the stomach and intestinal canal into the veins; or, finally, both of these suppositions are true.

As to the communication between the lacteals and the vena portæ, it was not only supposed by several of the older anatomists to take place, but was rendered very probable by several observations. Joh. Walæus * found, on tying the trunks of lacteals,, that the chyle passed into the vena portæ; Rosen and Wallerius, † J. F. Meckel, ‡ J. F. Lobstein, § and G. C. Lindner, || perceived, on filling the absorbents of the stomach, of the intestinal canal, and of the spleen, with quicksilver, that it passed into the vena portæ; Astley Cooper, ¶ also, found quicksilver in

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* Epistolæ duæ de motu Chyli et Sanguinis ad Th. Bartholinum, in Bartholini Anatomia, edit 5, p. 789.

† De Existentia Vasorum Absorbentium in Intestinis. Upsal, 1731.

‡ Nova Experimenta et Observationes de finibus venarum ac vasorum lymphaticorum. Berlin, 1772, p. 5.

§ De Liene. Argentorati, 1774.

|| De Lymphaticorum Systemate, Hal. 1787-8.

¶ Medical Records and Researches, selected from the Papers of a Private Medical Association. London, 1798. Vol. I.

the vena portæ after injecting with it the absorbents of the mesentery.

Such a communication between the absorbents of the stomach and the intestinal canal, and the vena portæ, is, however, absolutely denied by Haller, Mascagni, Cruikshank, Lieutaud, Portal, Sömmering, Hewson, and others. But, as happens not unfrequently in anatomy, physiology, and medicine, the authority of these celebrated men appears to have suppressed a truth. Though this assertion may appear bold to many persons, our authors feel themselves authorized to make it by later observations on this subject. Mr Fohmann, dissector at the anatomical theatre of Heidelberg, who has long been employed in examining the secretory glands of the intestinal canal, and the absorbents, saw the quicksilver with which he had filled the absorbents of the intestinal canal of two seals, force its way into the vena portæ. In order to ascertain if such a communication also existed in other animals and in man, the absorbents of the intestinal canal of two dogs, one horse, one cow, and of three human bodies, were injected with quicksilver in the presence of our authors. In all these animals, and in the human bodies, in which the injection was begun soon after death, and carried on with the greatest care, the quicksilver reached the branches of the mesenteric veins and the vena portæ, without any exterior force being employed. On a closer examination, it turned out that the communication of the absorbents, with the veins of the intestines, took place in the mesenteric glands, and that all the veins proceeding from a gland, which was filled with quicksilver, also contained it. The communication was very quick and easy in the seals and dogs, in which the mesenteric glands, heaped together in a lump, form what is called the *pancreas asellii*. As these experiments had the same results in six animals and three human bodies, they make it very probable that there is a communication between the absorbents and the mesenteric veins in the parenchyme of the absorbent glands.

It may be objected to the preceding conclusion, that the passage of the quicksilver from the absorbents into the mesenteric veins takes place in the mesenteric glands, that the quicksilver entered into the veins in consequence of the absorbents being ruptured. But if this had been the case, both the veins and the absorbents must have been burst, which is very improbable. The explanation of this phenomenon by supposing the sides of both the veins and absorbents to be ruptured, is also contradicted by the quicksilver passing from the absorbents into the veins in every one of the bodies subjected to these experiments.

From the very probable communication of the lacteals with 'the mesenteric veins, our authors think themselves enabled to explain the appearance of streaks of a substance like chyle, of a whitish colour, which are perceived in the blood of the vena portæ, after taking food. This phenomenon was observed by Harvey, Swammerdam, de Bils, Menghini, J. F. Meckel, Brendel, Alexander Monro, and others. Even Cruikshank, who denies the connection of the lacteals with the veins of the intestines, acknowledges that he has often observed a chyle-like fluid in the blood of the vena portæ, though he did not know by what means it got there.

Our authors also mention, as another proof that a part of the chyle taken up by the absorbents in the intestinal canal passes into the vena portæ, the experiments made by tying the thoracic duct. G. Duverney * tied the left *subclavian* vein of a dog above the junction of the thoracic duct with this vein, and the animal lived fifteen days. Astley Cooper also tied the thoracic duct of several dogs before it enters the subclavian vein. Nine of these survived more than ten days, and no one died during the two first days after the operation, although, on dissection, the thoracic duct was found burst, and the chyle poured into the cavity of the abdomen. It is highly probable, that in these animals a portion of chyle had passed into the vena portæ, and that their lives by this means were supported for some time.

Though the appearance of chyle-like streaks in the blood of the vena portæ is explained by this connection of the absorbents with the veins of the intestines, the passage of colouring, smelling, and saline substances from the intestinal canal into the blood of the vena portæ, does not take place in the same way. This is clear from several of these experiments. The chyle which was taken out of the lacteals in the eleventh experiment, which was made on a horse, to which indigo and camphor had been given, was as devoid of blue colour as that taken from the thoracic duct, and did not smell of camphor. Chyle taken from the lacteals of a horse, to which musk and spirit of wine had been given, emitted no smell of these substances. And, finally, the chyle taken from the lacteals of a horse, to which gamboge and spirit of turpentine had been given, did not look in the least yellow, and did not smell of turpentine. As the blood of the mesenteric veins, and of the vena portæ, emitted the odour of camphor and musk in these experiments, and its serum had a yellowish-green appearance probably derived from the indigo; and, farther, as the blood of the mesenteric veins, and of the vena portæ, appeared to contain several of the other substances exhibited, which were not found in the chyle of the thoracic duct, our authors conclude that there are other channels than the thoracic duct and the absorbents connected with the veins of the intestines in the mesenteric glands, by which substances may pass from the intestinal canal into the mass of the blood. These channels can only be the *roots* of the veins of the intestines.

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* Mem. de l'Acad. des Sciences de Paris, 1675.

It follows from these experiments, that the veins of the intestines appear particularly to take up the heterogeneous substances, such as the smelling and colouring matters, the metallic and saline substances, while the absorbents of the intestinal canal rather absorb the proper nutritious matters. The examination of the blood taken from a branch of the mesenteric vein of a dog, to which sulphuro-prussiate of potass had been given, supports this opinion. This blood did not contain any chyle-like streaks, but sulphuro-prussiate of potass was perceived in it. Chyle-like streaks, however, appeared in blood taken from the trunk of the vena portæ.

The opinion that substances are taken up from the intestinal canal by the veins of the intestines, is farther supported by the appearance of these substances in the mass of the blood, although the thoracic duct has been previously bound up. Sir Everard Home * tied the thoracic duct in rabbits just before its junction with the subclavian vein, and then conveyed a dose of rhubarb into their stomach. On causing the animals after a short time to be killed, and their fluids examined, he found rhubarb in the urine, in the serum of the blood, and occasionally in the bile; but there was no trace of it in the chyle of the thoracic duct. It cannot, therefore, be objected, in this case, that the rhubarb had probably reached the blood-vessels through some of the side branches of the thoracic duct, which had been left untied. A. C. Mayer † also found prussiate of potass in the mass of the blood and in the urine of several animals, to which it had been given after a ligature had been applied to their thoracic ducts.

Finally, the effect of different poisons introduced into the intestinal canal, after the thoracic duct was tied, may be brought forward to support the opinion that substances are taken up by the veins. Magendie tied the thoracic duct of a dog in the neck, a little before its junction with the subclavian, and then gave it two ounces of a decoction of nux vomica, which is a strong poison for dogs. The animal died shortly afterwards, and in as little time as other dogs of which the thoracic duct had not been tied. On opening the body it was evident that this passage had been well secured, and that a double passage did not exist. On another occasion, two ounces of decoction of nux vomica were thrown into the rectum of a dog after the thoracic duct was tied. The effect was the same as if no ligature had been applied, and the animal died very speedily. As the nux vomica, like other similar poisons, so far as we know at present, only displays its pernicious effects when conveyed into the mass of the blood, and as it could not pass into this fluid by the thoracic duct in these experiments, it must have entered into it through the vena portæ.

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* Philosophical Transactions for the year 1811, p. 1, p. 163.

† Deutsches Archiv. für die Physiologie, B. III. S. 496.

Although, from the above reasons, it cannot be doubted that certain substances pass from the intestinal canal into the veins, yet nothing certain can be said of the manner in which they pass. Emmert* was of opinion that poisons affected the blood by penetrating through the sides of the blood-vessels, aided by some attraction of the blood itself, in the same manner as the gravitating portion of the air forces itself in breathing through the sides of the blood-vessels of the lungs. It is more probable that there are short minute branches of veins arising from the mucous membrane of the intestinal canal, which are united with the sanguiferous veins of the intestines, and that the substances are taken up by these.

As the blood of the vena portæ, with those substances taken up by means of the absorption of the veins in the intestinal canal, and with a part of the chyle which appears to be poured into the veins by means of absorbents within the mesenteric glands, flows through the capillary vessels of the liver, and is mixed with some of the arterial blood of the hepatic artery before it passes through the veins of the liver and the *cava inferior* into the right auricle, and as the bile is chiefly separated, as an excrementitious matter, from the blood of the vena portæ, the relative proportions of which are thus changed in a peculiar manner, we must, at the same time, regard the liver as an organ of assimilation for those substances which are taken up from the intestinal canal. The liver, into the vessels of which, in the fœtus, the blood, returning with the absorbed substances, through the umbilical veins, is in great part poured, remains thus after birth and through the whole course of life an organ in which the substances taken up in the intestinal canal, partly by the absorbents and partly by the roots of the veins, are mixed with the venous blood, in order to repair the waste of the blood. In this respect there appears a great analogy between the action of the liver in the fœtus and after birth.

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* Ueber die Wirkungsart der Gifte, in d. Tubingen Blättern, B. II. St. 1, S. 88.

The ultimate result of the experiments performed by our authors on the channels by which substances pass from the stomach and intestinal canal into the circulating mass is this. The alimentary matters, the smelling, colouring, saline, and metallic substances taken into the stomach and intestinal canal, after being mixed with several fluids, separated from the mass of the blood to promote assimilation, such as the saliva, the gastric juice, and the bile, may pass into the mass of the blood by several channels:

1. Through the absorbents and the thoracic duct.
2. Through absorbents which are united with veins in the mesenteric glands.
3. Through the roots of the vena portæ.

Those substances which are conveyed into the sanguiferous system through the thoracic duct, as chyle, are mixed, in their passage through the mesenteric glands and the thoracic duct, with a reddish coagulating fluid, secreted from the arterial blood in these glands, and in the spleen, which brings the chyle to resemble blood. The substances, however, which are carried to the vena portæ are assimilated to the mass of the blood, by being mixed with venous blood, and by the change which they suffer in consequence of the secretion of the bile.

Our authors also remark, as the result of some of their experiments, that it is, in their opinion, very probable that those substances which are taken up by the absorbents from the surface of the mucous membranes of the lungs, of the urinary organs, and of the organs of generation, and by the absorbents on the outer surface of the body, and even from the parenchyme of the organs, pass into the mass of the blood, partly directly into veins in the lymphatic glands, partly, however, through the trunks of the absorbent system. The substances taken up by the absorbents are mixed, to promote assimilation with a fluid secreted from the arterial blood in the lymphatic glands, renal glands, and thyroid gland, in the same manner as the chyle receives a fluid secreted in the mesenteric glands, and in the spleen.

Our authors inform us that they are engaged in an experimental inquiry into the changes which alimentary matters undergo in their formation into chyle, and in their passage through the lymphatic system, and how they are finally assimilated to the nature of blood. To the result of these experiments we look forward with anticipation of much instruction; for our authors, in the present work, have shown themselves to possess all the qualities required for success in such investigations.

We have postponed, to another opportunity, some very ingenious remarks on the use of the spleen, and on the secrete urinary passages.

Professor Mayer on Absorption from the Lungs.

As an appendix to the preceding article, we shall give the results of a series of very ingenious experiments made by Dr Mayer, Professor of Anatomy at Berne, on the injection of fluids into the trachea, which he conceived to be the easiest and best method of determining whether the veins possess the property of absorption, and whether other fluids than chyle enter into the circulating mass.

This experiment of injecting fluids into the trachea was tried by Dr Goodwin, and after him by Autenrieth and Schlaepfer,[*] but they took no notice of the absorption of the fluids thus injected into the lungs. The veterinary pupils at Lyons have also injected water into the lungs of horses, and have found that they can support a considerable quantity without inconvenience.

Professor Mayer read his Memoir at the Meeting of the Helvetic Society, held at Zurich, and we extract our notice from the Bibliotheque Universelle of Geneva,[†] a periodical work of great merit.

I have been engaged for many years in experiments, which prove the absorption from the lungs. In 1812, I published some of them.[*] Since that time, I have made 80 experiments more on the same subject; I performed analogous experiments on the absorption from the intestines, and I found that it is much less than from the lungs. I made these experiments on various animals, viz. on rabbits, dogs, cats, goats, hedge-hogs, &c. I performed them with different coloured fluids; with the infusion of turmeric, of rhubarb, of saffron, of indigo, of madder, &c. I frequently made use of a mixture of indigo, of saffron, and of water. Lastly, I employed solutions of the prussiate of potass, of nitre, of alum, of acetate of lead, muriate of iron, oxide of arsenic, oils, &c. &c.

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[*] Dissertatio Inauguralis, sistens Experimenta de effectu liquidorum quorundam medicamentosorum ad vias aëriferas in corpus animale. Auctore Schlaepfer, Praes. Autenrieth, Tubingæ, 1816.

[†] Bibliotheque Universelle, Sciences et Arts, Tome VII. p. 51. 8vo. Geneve, 1818.

[*] Dissertatio sistens Experimenta quædam in Animalibus aqua Suffocatis Instituta, Tubing. 1812.

The following are the summary results of these experiments:

1*st*, Animals support a considerable quantity of liquid injected into the lungs without experiencing mortal symptoms from them. Rabbits can support a dose of four ounces and half of water in 24 hours. But these injections should be performed by an opening made in the trachea; for if we inject these fluids by the larynx, they excite the most severe symptoms of suffocation, and the animal soon sinks under it. The suspension of respiration during this irritation of the muscles of the larynx by the injection is the only cause of death.

2*d*, The symptoms of suffocation which arise from injections are not serious when we inject pure water; but they become so when we take thick fluids, for example oil, which obstructs the aërial passages; or some chemical solutions, which, destroying the parenchyme of the lungs, prevent the oxydation of the blood, and produce extravasations of blood, and inflammation in the lobes of the lungs.

3*d*, The fluids and solutions injected into the lungs are absorbed, more or less quickly according to their nature, and their degree of concentration.

4*th*, This absorption is in general very great, but less in young and newly born animals than in adults.

5*th*, Absorption takes place by the pulmonary veins, for it has occurred in the space of three minutes; we find in the blood the fluids injected, before we perceive them in the chyle; we find them in the left auricle and ventricle of the heart, long before we can see the least trace of them in the right auricle. Lastly, absorption is carried on even although we tie the thoracic duct.

6*th*, Absorption is likewise performed by the lymphatic vessels, but more slowly.

7*th*, The veins of the stomach and intestines also absorb, but in much smaller quantities.

8*th*, We can demonstrate in the blood the existence of fluids absorbed by the veins. It is easy to discover there the prussiate of potass, the muriate of iron, arsenic, &c. We can trace the prussiate of potass injected into the lungs, first in the arterial blood of the heart and arteries, then, if we continue the injection, in the venous blood. The sulphate or the muriate of iron, mixed with the blood, produces a green or blue precipitate.

9*th*, We find these fluids in abundance in the urine in the bladder, and in that in the kidneys. The prussiate of potass can be discovered in it seven minutes after the injection.

10*th*, The prussiate of potass is likewise deposited, and even in considerable quantity in the serum of the pericardium, of the pleura, of the peritonæum; in the synovia, under the skin, and in the milk.

11th, When we have injected prussiate of potass, we can discover this substance after some hours, not only in the fluids, but also in many of the solids. Several of these parts then became green or blue with the muriate of iron, viz. the cellular tissue under the skin, and in the whole body, the fat, the serous and fibrous membranes. We can tinge, in green and in blue, by the solutions of iron, all the aponeuroses of the muscles, tendons, and the lateral and interior ligaments of articulations; for example, the circular ligament in the ileo-femoral articulation; the crucial ligaments in the femoro-tibial articulation. We find the other parts of the fibrous system in the same state, namely, the dura mater, the periosteum, and the pericardium, &c.

12th, The membranes of arteries and veins, even the valves of the heart can be entirely coloured blue. The mitral valve in the left ventricle alone becomes blue, when we do not continue the injection long enough.

13th, The parenchyme of the liver and spleen cannot be coloured blue, but sometimes the cellular tissue around their great vessels. The lungs, the heart, and the kidneys, can be coloured blue.

14th, The secretory glands, namely, the salivary gland, the pancreas, the mammæ, become blue.

15th, Neither the substance of the bones nor the marrow becomes blue.

16th, The substance of the muscles, and that of the nerves of the brain, and of the spinal marrow, do not change their colour, by soaking with the muriate of iron. These organs appear to exert a repulsive and exclusive force, on the contact of fluids foreign to their nutrition. We may conclude from this that the opinions of many physiologists, who say that poisons act mortally, when they are applied to parts of the nervous system, are not well founded, and are devoid of direct proofs.

17th, These experiments, which may throw some light on secretion, the reproduction and nourishment of bodies, have also taught me the passage of liquids from the mother to the fœtus. The experiments with the prussiate of potass succeeded very well. We can discover this substance in the water of the amnion, in that of chorion, and of the umbilical vesicle, in the liquid of the stomach, in many solid parts of the fœtus, for example, in the kidneys, in the stomach, &c. as also in the placenta. When we lay a fœtus, to the mother of which we have given prussiate of potass, into a mixture of the spirit of wine and muriate of iron, we perceive it become blue coloured. Thus we acquire the most certain proof of the passage of fluid from the mother to the fœtus, a proof that we have vainly sought for till now in the history of physiology. The fluids taken into the blood of the mother are deposited in the tissue of the placenta, and are thence absorbed by the veins of the fœtus.

PART III.

MEDICAL INTELLIGENCE.

Letter from Mr Lizars, *containing the Dissection of the Case of Hydrocephalus Chronicus, in which the Ventricles were repeatedly punctured.* (No. 67, p. 243.)

Dear Sir,—Little was I aware when I sent the sheet to press descriptive of the case of hydrocephalus chronicus, that my little patient was so soon to fall a victim to this terrible malady. Thus our best endeavours in our profession are too frequently frustrated. All my anxiety, my care, and fond anticipations, were in a moment crushed. There is one great consolation, however, that this case affords—a prospect of overcoming this desolating disease by operation, for the child did not fall a victim to the puncturing, as the case satisfactorily elucidates.

My last report, in the preceding number of the Journal, mentions, that the teething was a great source of irritation. On the day following this, as there appeared evident fluctuation within the brain, I repeated the puncture on the right side, and removed three ounces and a half of dark-coloured serum. This relieved her for a few hours, but afterwards the fits returned, and she seemed to suffer much from her mouth. In the evening I scarified her gums, and recommended the warm bath.

Next morning, after passing a very restless night, she was evidently worse; the epileptic fits recurred at shorter and shorter intervals. The gums were not so inflamed, but equally swollen. The bowels were sufficiently open. The warm bath was used several times always with temporary alleviation, but the fits gradually exhausted her, and about 3 o'clock P. M. she expired. Fortunately the parents consented to an examination of the head.

Dissection.

After the integuments were dissected back, the bones were found loose. The frontal separated from the parietal, and the former had its two portions removed from each other. The anterior fontanelle was particularly large, extending between the two portions of the frontal bone and downwards on each side of the coronal suture. The posterior fontanelles were scarcely apparent.

The left half of the frontal bone was now removed, when the brain appeared a pellucid bag filled with water; the dura mater adhered so intimately to the bone, that it could not be left to protect the brain. This membrane was redder than usual, and, when torn from the bone, exhibited numerous bleeding points. The brain, or more correctly, the tunica arachnoidea, for the cerebral matter on this left side was obliterated, burst, and about two ounces of serum flowed out. The other half of the frontal bone was next removed, and the cerebral *pouch* then exposed. On this right side it was thicker, and some convolutions were apparent, but extremely small; the divisions were very shallow. On each side, a circular portion of the pouch was now removed from what was once the anterior lobes, and then were displayed two large cavities filled with serum, almost transparent. The fluid was carefully removed with a syringe, and into whatever side the instrument was inserted, the fluid on the opposite diminished, showing there was a free communication. The fluid amounted to three pounds.

The fluid had obliterated nearly the whole of the cerebrum, leaving merely a shell with the septum lucidum and a septum across the left hemisphere. The tentorium cerebelli was entire, and had tended to protect the cerebellum, which was perfectly sound. The foramen Monroianum was so large as to admit the finger. The foramen commune anterius was equally large, and brought at once into view the infundibulum and the third ventricle, the latter of which might be said still to exist in consequence of the commissura mollis being present. The foramen commune posterius was of equal magnitude.

The walls of this shell or pouch varied in thickness, from a line to the third of an inch. In the thickest parts, it consisted of three parallel strata: the external was the cineritious matter, of a pale colour, and in some degree diaphanous; the central or intermediate was the medullary substance, nearly of its usual colour and consistence; and the internal stratum, which lined the latter, was of a pale yellow colour, semidiaphanous, extremely tough, and resembled coagulable lymph; every trace of pia mater was gone. At the bottom of the cavities there were numerous red particles, apparently the colouring globules of the blood. The walls of the cavity were thinnest at the left side of the coronal suture and left side of the occipital bone. The septum lucidum was remarkably strong, thick, and tough, in consequence of the addition, on each side, of the stratum of coagulable lymph. There was no fifth ventricle. On the left side, or in the left lateral ventricle, there was a considerable septum of cerebral matter, extending across the middle of the cavity; it was a little posterior, but in a line with the coronal suture. It had the print of the trocar upon it, for it must have been this mass that the instrument had entered when I punctured on the 8th and 18th of February. Where I pierced on the other days was about a quarter of an inch in thickness. There was no choroid plexus on either side, and the fornix was so diminished in breadth as merely to assist the septum lucidum.

This, with the other cases on record, shows, that, unless the operation is had recourse to early, there can be little chance of success; for the thickening of the pia mater,—or perhaps it would be more correct to call it a deposition of coagulable lymph, for the septum of cerebral matter in the left cavity was equally coated with it,—must prove an insuperable barrier to any increase of medullary substance.

The case of the patient afflicted with Neuralgia, on whom you witnessed me cut the osseous branch of the inferior maxillary nerve as it enters the ramus of the bone—the branch philosophically named by Soemmerring "*nervus mandibulo-labialis,*" I have deferred communicating till next quarter, in order to observe whether he continues free of pain. The other day, I found him working in the fields, perfectly well. I trust it will be convenient for you to insert his case in the next number of your valuable Journal; and by so doing, you will much oblige, dear Sir, your very obedient servant,

John Lizars.

6, *George Street*, 13*th June* 1821.

Biographical Notice of the late Dr Bateman.

Died, on the 9th of April, at Whitby in Yorkshire, in the 43d year of his age, Thomas Bateman, M.D. late of Bloomsbury Square. The health of this excellent and lamented physician had long been in a declining state, and there had been for some time unhappily little prospect of any favourable result either from the resources of art, or the assiduous and affectionate attentions of his family. The failure of his bodily powers did not, however, impair the vigour of his mind, and his wonted cheerfulness continued unabated to the last, his religious principles supporting him under the expectation and approach of death. In recording his regretted illness and decease, it is impossible not to advert to the loss which his personal connections and society at large have thereby sustained. But, as a detailed biographical memoir will probably be given of him at some future period, it is sufficient at present to remark, that in his private life he was most exemplary, and, in the exercise of his profession, he upheld its dignity and usefulness by independent feeling, integrity of conduct, active benevolence, and extensive learning. Dr Bateman was, indeed, highly gifted for ministering to the sick; being acute and accurate in his observation of disease, and prompt and judicious in the treatment of it. His contributions to the medical literature of his country have been no less various than important, whilst the zeal and ability with which for many years he performed the arduous services of the Public Dispensary, as well as of the House of Recovery or Fever Hospital, were highly beneficial to those Institutions, and to the community. Of him then may it with truth be said, that, though removed from life at an early period, he has descended full of honour to the grave.

London, April 20, 1821.

Biographical Notice of the late Dr Robert Steuart, first Member of the Medical Board at Bombay. Extracted from a Bombay newspaper.

Died, at London, on the 4th November 1819, Robert Steuart, Esq. late first member of the Medical Board, and Mint Master at this presidency.

Mr Steuart was a younger son of the ancient and respectable family of the Steuarts of Ballechin in Perthshire. He had reached England on the first of the preceding month, after an absence of upwards of thirty years in India. He landed in good health, but caught his fatal illness during his short residence in London, where he was led to exert and expose himself rather imprudently, as well from his habitual impatience of temper, as from his eagerness to meet his wife and children, who were in France, and who had moved from the neighbourhood of Paris to Boulogne with the long cherished, but vain hope, of welcoming him on his landing in that country.

Few men have received from nature a more robust or powerful mind than Mr Steuart. In the extent and variety of his scientific attainment he was without a rival in this country, and perhaps had few equals in Europe. His habits of application were, however, far from regular. He had conquered the difficulties of science by vigorous application in the earlier part of his life; and when not occupied by his official duties, he spent much of the latter part of it in making astronomical observations, and in prosecuting at his ease such chemical experiments as accident suggested to him. It was chiefly when any difficulties occurred in the practical branches of chemistry or mechanical philosophy, in which case his assistance was uniformly applied for, that his great excellence and superiority were conspicuous. When so roused and excited, the intensity of his application, the compass of knowledge which he brought to bear on one point, the richness, ingenuity, and resources of his invention, were truly admirable. Placed in London or Paris, with his powers, and with his mind awake to the progress of discovery immediately around him, he would probably have ranked among the most active and successful promoters of science in his time. He required the constant stimulus of difficulty to excite him to exertion; for the prize, whatever it was, when once attained, was thrown aside and no longer valued or thought of. Yet it ought not to be forgotten, that the bold and decisive system of medicine so successfully adopted in this country, owed much to him and to his friend Dr Helenus Scott. When Sir James Mackintosh left India, Mr Steuart received a tribute to his talents very gratifying to his feelings, having been unanimously elected to succeed that eminent man as President of the Literary Society of Bombay. When at the head of the medical service in this establishment, he was distinguished by a most conscientious anxiety to do justice to all over whom he was placed; and to weigh with impartiality their reasonable claims and expectations,—not only the superior claims arising from distinguished merit, but the humbler though equitable ones that rested on active zeal, and even mere length of service. In private life, a warmer hearted, more generous man, never existed. No selfish feeling had a place in his breast. He was ever ready to assist with his advice, his influence, and his purse, all whom he befriended. He was liberal,—he was lavish. Such a man might have his faults, and he had his faults, and great ones. But they rose from a spring near to that to which we owed some of his brightest virtues. They originated in the warmth of his temper and passions, and from a spirit which he had not been taught sufficiently to control, never from any thing low or selfish; and they are buried with him in his grave; but the remembrance of his high attainments, his frank and liberal patronage of merit wherever he found it, his bounty to the distressed, his kindly affections to all who had claims on his regard, his open hospitality, his warm and generous friendship, will long be remembered with feelings of melancholy regret, by those who enjoyed the honest flow of his rough but manly affection.

Biographical Notice of the late Dr Gregory.

Dr James Gregory, Professor of the Practice of Physic in the University of Edinburgh, died at Edinburgh on the 2d day of April, at the age of 68. He received the degree of M. D. from the University of Edinburgh in 1774, and published an Inaugural Dissertation, *De Morbis Coeli Mutatione Medendis.* In 1776 he was elected Professor of the Institutions of Medicine, on the resignation of Dr Alexander Monro Drummond, nominated about three years before, although, in the interval, Dr Duncan senior had discharged the duties of the Chair by the appointment of the Town Council, and had given general satisfaction. Dr Gregory published his *Conspectus Medicinae Theoreticae* in 1780, as the Text Book for his Lectures on the Institutes of Medicine. In 1790, Dr Gregory was elected Professor of the Practice of Physic, on the resignation of Dr Cullen, and some time afterwards he got to the head of Medical Practice in Edinburgh, and was consulted from all parts of the empire.

On the 6th of June last, Dr Home, previously Professor of the Materia Medica, was elected Professor of the Practice of Physic after a very keen contest, in which his competitors were Dr Thomson, Professor of Military Surgery, Dr Duncan junior, Joint Professor of the Institutes of Medicine, Dr Alison, Professor of Medical Jurisprudence, Dr Saunders, Dr Dewar, Lecturers on Medicine, Dr Abercrombie, Dr Kirby, and Dr Landale, all of Edinburgh; Dr Armstrong, Dr Ashburner, and Dr George Gregory, of London, and Dr Carson of Liverpool. Before the election, Dr Abercrombie, Dr Duncan, and Dr Thomson, withdrew from the contest, and Dr Home had 17 votes, Dr Alison 9, and Dr Saunders 1; the other 5 electors having either declined voting or being absent. Dr Thomson and Dr Alison have again started for the Theoretical Chair, on the presumption that Dr Duncan junior will be elected to the Materia Medica, now vacant.

VACCINATION.

Dr Jenner's Circular to the Medical Profession, pointing out the causes of those affections which have occasionally followed Vaccinia and Variola, known by the term Varioloids. Communicated under the author's authority by John Fosbroke, Esq.

PRESUMING that you are conversant with the practice of Vaccine Inoculation, according to the instructions which I have formerly published, and that you may have seen, in addition to my general observations, those which I have since made and promulgated, respecting the "Varieties and Modifications of the Vaccine Pustule, occasioned by an herpetic and other eruptive states of the skin," I take the liberty of requesting to be informed, whether the observations acquired in your own practice coincide with mine? That is to say, whether the Vaccine Vesicles, under these contingent circumstances, go through their course with the same regularity as when the skin is free from diseases of this description?

Secondly, Whether, on the other hand, such individuals are more liable to resist the legitimate action of Vaccine Lymph when inserted into the arm, than those who are free from such eruptive affections?

Thirdly, Whether you have met with cases of Small-Pox, or what has been termed the Varioloid Disease, after Vaccination; and if so, whether in such cases you ascertained those deviations at the time of Vaccination in the progress of the pustules on the arms, which I have described as liable to take place when the skin is affected with herpetic and other eruptions?

As you may not have the paper before you, to which I here allude, nor the short series which followed it, I will point out the periods of their publication, and where they are to be found. The first was published in the Medical and Physical Journal, No. 66, for August 1804, and gives an outline of the subject, of some extent. It points out the fact, that a single serous blotch upon the skin, existing during the progress of the Vaccine Vesicles on the arms, may occasion such irregularity and deviation from correctness, that Vaccination under such circumstances cannot be perfectly depended on.

I have found abrasions of the cuticle to produce the same effect; such, for example, as we find in the nurseries of the opulent, as well as the cottages of the poor, behind the ears, and upon many other parts where the cuticle is thin. Happily we find no irregularity in the Vaccine Vesicle in an uncontaminated skin; but we find it if the skin is beset with these herpetic blotches, or even simple serous oozings from an abraded cuticle. It is not to be considered as of less consequence when occupying a small space; a speck behind the ear which might be covered by a split pea, being capable of disordering the progress of the Vaccine Vesicle. Dandriffe may be considered as a malady of this class, the incrustation on the scalp being formed from excoriation beneath; and however slight, for there is every gradation between a thin scurfy layer of a dirt-looking substance, or even patches of this thin crust, and Tinea itself. However, fortunately for the safety of the Vaccine Practice, and fortunately too for the ease of the practitioner, all these affections of the skin may be removed with very little trouble.* Sore eyelids are also impediments to constitutional Vaccination.

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* The most effectual application which I know for subduing these cuticular diseases, that produces impediment, is the Unguentum Hydrargyri Nitratis, as much lowered with Unguentum Cetacei, or any other bland ointment, as the irritability of the subject may require. The Dandriffe demands a double process—the *first* consists in removing the incrustations, the *second* in subduing the oozing. There are skins that

The second paper relating to this subject was given by the late Dr Willan, in answer to the following interrogatory, addressed to me by himself:[*] "What are the changes produced in the vesicle, when a person is affected during Vaccination with the Shingles, the Vesicular Ringworm, or Impetigo?"

To this question I made a full, and, I believe, a satisfactory reply. Its purport will be shewn by quoting a few sentences from it. "To answer this question in its fullest extent, would lead me through a wide field of observation, which I mean to go over at a future time; but the following answer may probably convey to you as much information upon the subject as you may now require."—"Vaccination, under the circumstances you mention, usually produces a striking deviation from the perfect character of the Vaccine vesicle at some period or other of its progress, but more frequently in its early than in its declining stages; indeed, it is commonly perceptible in a day or two after inoculation. It would be difficult, perhaps impossible, without the aid of drawings, to give a correct description of the varieties which an herpetic state of the skin is capable of producing, from those trifling deviations which prove no impediment to the Vaccine security, up to that point of imperfection in the vesicle which affords no security at all. Perhaps I commit an error in saying "*no security at all*," for it strikes me, that the constitution loses its susceptibility of Small-Pox contagion, and its capability of producing the disease in its perfect and ordinary state, in proportion to the degree of perfection which the Vaccine vesicle has put on in its progress, and that the Small-Pox, taken subsequently, is modified accordingly.[†] When no deviation takes place in the ordinary course of the Vaccine vesicles, or when it is inconsiderable, the Herpetic blotches or vesicles, of whatever kind they may be, often assume (sometimes as early as the third or fourth day after the insertion of the Vaccine fluid) a new character, not unlike the Vaccine, and, keeping pace in their progress with the vesicles on the arm, die away with them, leaving the skin smooth."

These two papers comprehend, first, the simple fact of important deviations being produced by diseases in pre-occupation of the skin; and, secondly, a general account of the characters of these deviations, and their differing degrees of influence upon the Vaccine protection.

Some further observations were published by Dr Wilson Philip, M. D. of Worcester, in an appendix to his work on Febrile Diseases, who requested some information from me on this interesting subject. This letter goes more into detail than the former, though its purport is the same—namely, to guard the practitioner against the insidious influence of a diseased skin, when he vaccinates. It will be an object of future consideration, to enter more generally into the minutiæ of this subject; but a sketch like this does not afford scope for the completion of such a design. Let me advise every practitioner, not to confine his cautions, nor to narrow my meaning, to one class of eruptive affections only. In short, every disease of the skin, which may be called *serous*, or one that sends out a fluid capable of conversion into a scab, has the power of exerting this modifying and counteracting influence; and I have also seen purulent fluids exert a similar influence in producing deviations. If I was asked what were the other actual impediments to perfect vaccination, as a general answer I should say, that I scarcely know any other except spurious matter,[‡] or

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will not well bear unctuous applications; the desiccative lotions may then be made use of two or three times a-day; such as those prepared with the sulphate of zinc or superacetate of lead, &c.

[*] It was published in the year 1806, in his Treatise on Vaccine Inoculation.

[†] Further observation has confirmed this opinion, and has also developed much other curious matter respecting the spontaneous blending of the herpetic with the vaccine fluid, through the medium of the constitution, when under the influence of Herpes.

[‡] I am happy to see that these interruptions are now discovered in Germany, as

impediments too obvious to require my naming them here, such as deranging the Vaccine vesicle in its progress, by incautiously robbing it of its contents, or producing a new action by external violence.

Notice of a new Edition of the Greek Medical Classics; by Professor Kühn of Leipsic.

SOME time ago, a prospectus was distributed by Dr Kühn, the learned professor of physiology and pathology in the University of Leipsic, announcing his intention of publishing, in succession, the whole of the works of the Greek Physicians which are still preserved, and soliciting subscriptions for the work. The first volume of this laborious undertaking has appeared since the commencement of the present year. Fortunately, the works of Galen, which few physicians in this country can boast the possession of, stand first in the order of publication. The volume before us, besides the preface, which notices the editor's intention and the difficulty of its execution, and the sources whence he has derived assistance, contains an extensive Historia Literaria of about 250 pages; in which is given a succinct account of the life, education, and general doctrines of Galen; a list of his very numerous writings, distinguishing those which are genuine from such as are doubtful or evidently spurious. The further contents of this volume are Galeni adhortatio ad artes addiscendas—De optima Doctrina Liber—Quod optimus medicus sit quoque philosophus—De sectis ad eos qui introducuntur—De optima secta ad Thrasybulum Liber—De constitutione artis medicæ ad Patrophilum Liber—Ars Medica—De Elementis ex Hippocrate, Liber. I. —— II.—De Temperamentis, Lib. I.—Lib. II. —— III.

The work is formed on the plan of the present Greek Classics, and may without disparagement be placed in the same rank. The upper half of the page contains the Greek Text, in a very neat clear type, without contractions, and on a good paper. The Latin translation stands beneath.—On the summit of each page is a continued reference to the Basil edition of the works of Galen; and to that of Ren. Chartier, published at Paris in 1679. The whole forms an handsome octavo volume, consisting of upwards of 900 pages.

T. M. W.

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appears in Professor Hufeland's Journal for June 1819, an extract of which is given in the London Medical Repository, vol. xiv. p. 502.

In addition, see Bateman's Synopsis of Cutaneous Diseases, pp. 222, 223. Cross's History of the Variolous Epidemic at Norwich, 1820, pp. 60, *et seq.* 196, and 288. I was lately puzzled to find the cause of irregularity in a Vaccine vesicle, the skin being free from any apparent eruption; upon minute inquiry I discovered a whitlow on the thumb, in which suppuration had taken place.

⁂ In the excellent account of certain diseases lately prevailing in Alford, by Mr Murray, it should have been mentioned that the population of the district is about 2500.

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We have received the following publications for Review:

Bichat on the Anatomy and Phyſiology of the Mucous Membranes. Tranſlated by Joſeph Hamilton, Eſq. pp. 100. 8vo. London. Callow, 1821.

The Phyſician's Guide. By Adam Dods, M. D. pp. 320. 8vo. Worceſter, 1821.

Obſervations on ſome of the General Principles, and on the particular Nature and Treatment of the different ſpecies of Inflammation. By J. H. James, Surgeon to the Devon and Exeter Hoſpital. pp. 328. 8vo. London 1821.

A Practical Eſſay on the Ringworm of the Scalp, Scabbed Head, and the other ſpecies of Porrigo. By Samuel Plumbe, Member of the R. C. Surg. Lond. and Med. Ch. Soc. pp. 104. 8vo. London, 1821.

Eſſays on the Female Economy—1. On the Periodical Diſcharge of the Human Female; 2. On a ſpecies of Abortion not heretofore deſcribed. By John Power, M. D. Phyſician-Accoucheur to the Weſtminſter Lying-in Inſtitution, &c. pp. 101. 8vo. London, 1821.

Callow's General Catalogue of Second-hand Medical Books, corrected to 1821. pp. 270.

The Hiſtory of the Plague, as it has lately appeared in the iſland of Malta, Gozo, Corfu, Cephalonia, &c.: detailing important Facts illuſtrative of the Specific Contagion of the Diſeaſe, with particulars of the means adopted for its eradication. By J. D. Tully, Eſq. Surgeon to the Forces. 8vo. London, 1821. pp. 292.

Obſervations on the Varioloid Diſeaſe, or on Smallpox under the form which it preſents in perſons previouſly vaccinated, illuſtrated by Caſes and Experiments; publiſhed with a view to a true eſtimate of the value of Vaccination. By William Stoker, M. D. &c. 8vo. Dublin, 1821. pp. 68.

A Practical Treatiſe on the Inflammatory, Organic, and Sympathetic Diſeaſes of the Heart; alſo on Malformations of the Heart, Aneuriſm of the Aorta, Pulſation in Epigaſtrio, &c. &c. By Henry Reeder, M. D. 8vo. London, 1821. pp. 276.

The Accoucheur's Vade-Mecum. By Joſeph Hopkins, M. D. 2 vols. 12mo. London, 1821. pp. 232 & 230.

A Series of Queſtions and Anſwers, for the uſe of Gentlemen preparing for their Examination at Apothecaries' Hall; with copious and uſeful Tables annexed. By Charles Mingay Syder, Licentiate of the Honourable Society of Apothecaries. 12mo. London, 1821. pp. 128.

Remarks on the Epidemic Yellow Fever, which has appeared at intervals on the north coaſts of Spain ſince the year 1800. By Robert Jackſon, M. D. 8vo. London, 1821. pp. 207.

The Principles of Forenſic Medicine, ſyſtematically arranged and applied to Britiſh Practice. By John Gordon Smith, M. D. 8vo London, 1821. pp. 503.

The American Edition of the Edinburgh New Diſpenſatory, by Andrew Duncan, Junior, M. D., enlarged, and adapted to the Materia Medica of the United States. By Jacob Dyckman, M. D. &c. &c. 8vo. New-York, 1818. pp. 798.

A Treatiſe on the Diſeaſes of Negroes, as they occur in the Iſland of Jamaica, with Obſervations on the Country Remedies. By James Thomſon, M. D. 8vo. Jamaica, 1820. pp. 168.

Nouvelles Recherches ſur les effets de l'iode et ſur les Precautions à ſuivre dans le Traitement du Goitre par ce nouveau remède. Par Coindet, M. D. 8vo. Geneva.

Notices ſur l'Adminiſtration de l'iode par Frictions et de l'Application de ce Medicament dans les Scrophules et quelques Maladies du Syſtème lymphatique. Par Coindet, M. D. 8vo. Geneva.

Ablaſs im Jahre 1817; nebſt Deutung der Null, verfaſst durch Johann. Chriſtian Goldbeck, M. D. 4to. Altona.

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EDINBURGH MEDICAL AND SURGICAL JOURNAL.

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PART I.

ORIGINAL COMMUNICATIONS.

I.

The Influence of Chemical Laws on the Phenomena of Physiology. By HENRY DEWAR, M. D. F. R. S. E. Fellow of the Royal College of Physicians of Edinburgh, and Lecturer on the Institutions of Medicine.

AMONG the controversies which have subsisted in the philosophical world on the distinguishing phenomena of living beings, one which has been sometimes keenly agitated is, Whether or not they depend entirely on the chemical laws of matter? This question, however, is reducible to a mere verbal warfare. If it is closely followed up, the only point remaining in the end for difference of opinion will be, "How far ought the meaning of the term Chemistry to be extended?" Those who have speculated on this subject have too often lost sight of the extensively varied nature of the objects comprehended in it, and have conferred on it a spurious simplicity, by affecting to consider every scientific purpose as accomplished when all the laws concerned in it are reduced under general denominations—such as, impulse, action, stimulus, excitement, or chemical operation. It is when we enter into the rich variety of the phenomena, and examine both the resemblances and the differences which are to be found among them, that our minds make real accessions of knowledge. The expanded views thus obtained powerfully repress those sweeping theories which tend to impart a meanness to the surface of the creation, by accommodating it to the narrowness of the human powers.

No set of phenomena in the physical world claims so great an interest as those of life. It is chiefly from a relation to these that other objects derive their interest.—The intention of the present paper is to suggest some considerations, in answer to the following inquiries respecting the laws of life.

What is the leading difference which the phenomena of life present, from others which all agree in denominating chemical?

In what degree is life illustrated by its chemical agency on foreign matters, and the chemical effects which it leaves behind it?

What illustration do the laws of life receive from the influence which chemical agents, acting from without, exert in modifying its phenomena? And, finally,

How far may the views thus afforded regulate our practical exertions, in employing the resources of art for influencing the phenomena of life, by correcting its deviations from a healthy condition?

A living body is a congeries of matter, the particles of which, like many of those which are dead and inorganized, exert certain mutual actions, by which they produce certain results, issuing in modifications of the properties of congeries; and these vary according to external circumstances.

But living bodies exhibit results wholly different from others. The materials of which they consist are not indeed in the least degree withdrawn from the influence of the mechanical and chemical laws which belong to other matter. But new laws are superadded, by which the effects of these common laws are in the most important manner changed. Some have shown a wish to represent the powers of life as consisting, not in the superadding of any new laws to those otherwise belonging to the materials of the fabric, but in the formation of a peculiar arrangement of those laws to which the particles of matter, under all circumstances, are subjected. For some such reason as this, it has been a favourite maxim with some ingenious theorists, that "life is a forced state." Such an expression, however, is more poetical than just. It exhibits the subject in one partial attitude, and affords no leading character of the phenomena fitted to impart precision to our views. There are forces which support life, and there are forces which tend to destroy it. But both kinds of forces are equally natural, and operate with equal freedom and spontaneity.

The great character which distinguishes the laws and powers of life (as embracing both the vegetable and the animal world) from those of inorganized matter, is, that the former have always a separate origin. However intimately connected with the body in which they reside during the living state, they are independent of any *particular mass* of matter. That congeries of phenomena which distinguishes any living individual is gradually transferable to a portion of matter wholly different. There are no particles of matter to which life is necessarily attached. The introduction of vegetation or of animation is independent of all the other operations of matter. It brings into contact with them a separate set of laws; and the continuance of the phenomena requires to be kept up by an influence emanating from a living being already existing.

The origin of living bodies, or of that chain of impulses on which the existence and perpetuity of each species depend, is to us unknown, and leads the mind more directly to the suggestion of *creation* than any other feature of the world. Even those who, on a cursory view of inorganized nature, might be disposed to embrace the belief of the eternity of the world, must become embarrassed when they attempt to trace the origin of organized bodies, particularly when they find that the species now existing are so different from those which organic remains found in the strata of the earth show to have existed in some previous states of our globe. This fact indicates that there must have been a successive introduction of new species of beings, perfectly corresponding to all the ideas which can be formed of a series of creations.

The doctrine which maintains the existence of a distinct living principle in each organized individual, as the cause of all the phenomena of life, has been censured by some as an unnecessary hypothesis. But the censure will lose its force when we consider the fact, that no portion of matter can become the seat of life, without being introduced within the influence of a train of previous living operations. It must also be granted that the living principle is essentially different in the different species, as each commands a train of appropriate phenomena.

Keeping in view this consideration, which will preserve us from attaching grovelling conceptions to any department of the subject, we can proceed with greater satisfaction in taking a near survey of the characters which bring living operations into contact with the laws of chemistry.

The first observation to which I would direct the attention of the Society * on this subject, is, that "the operations of life resemble those of chemistry in their minuteness." When an animal receives an impulse from any surrounding object, and, in consequence of this impulse, is made to feel and act in a particular manner, the first impulse and the ultimate results are palpable phenomena; and, viewing them in a general way, and with a careless eye, we might be induced to rank them among those of a mechanical kind, or at most to admit, along with mechanical agency, the interference of a sentient principle, to which this carelessness might attach an equally gross generality. But, when we examine the organs concerned in the reception, transmission, and modification of the impulse in its successive stages, we shall be led to acknowledge a more recondite set of operations. The nervous system is more concerned in sensation and the production of action, than any other continuous texture belonging to the corporeal frame. We must acknowledge, that some change is rapidly transmitted through this system. We cannot allow it to be a mere inert conductor, which, without undergoing any modification in itself, is the arbitrary seat of operations depending on a different principle. We are bound to view it as an *appropriate* organ. Its appropriate nature must arise from its intimate constitution. None of its other properties arising from that constitution show us *how* it is appropriate. It is, in this respect, recondite. While the functions of it are carried on, they must depend on some mutual action among its parts. We are not accustomed to call this a chemical action, because no chemical change arises from it sufficiently obvious and permanent to be perceptible. But we ought never to forget that there must be a transmission of rapid successive changes, which form a long intermediate chain, connecting certain known causes with certain remote effects; not remote in point of time, but in the number of intervening agencies which are concerned. These, like chemical agencies, are extremely minute; they are strictly corpuscular; operating at insensible distances, and numerous within a short compass. As chemical actions change the qualities of bodies, so these fugacious living actions generate peculiar effects. The operation of the nervous system on the other parts of the fabric, and the operation of these parts on one another, must evidently be considered in the same light. These operations differ from others of a chemical kind, only as chemical operations differ from one another. It is not easy to pronounce which set of them is comparatively the most minute; but the general aspect of the subject, as well as some considerations which will be soon suggested, will probably lead us to the conclusion, that the operations of life exceed, in minuteness, all those of inorganized matter. They either take place between more minute parts, or depend on certain reciprocal aspects of the particles which are more delicate to fix; and require, for this purpose, the presence of the living principle. The great variety of effects resulting from these transmitted changes, depending on the variety of external agency, of internal condition of the same individual, and, still more, as exemplified in the diversities of living species, serves to impress us deeply with the delicacy of these operations.

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* This Paper was read before the Royal Society of Edinburgh.

The relation of living action to chemical laws appears more close, when we advert to "the acknowledged chemical effects to which life gives rise," consisting in the permanent chemical changes produced on dead matter by the nutrition of the organs, and by the function of secretion. The chemical nature of these changes cannot be denied. Certain foreign particles are brought into contact with the organized body. Some substances, pulverized or dissolved, are applied in the soil to the roots of plants. Other substances are applied to the internal surface of the alimentary canal in animals, and in man. Portions selected from these are transmitted by an aqueous vehicle through the whole body, where they become constituent parts of the living organs. The texture of the organs thus formed widely differs from the pre-existing state of the matter applied, and from any that can be obtained by agencies of other kinds. The same observations apply exactly to the secretions. The animal economy has, on this account, been called a chemical laboratory. To maintain that it is nothing else than a laboratory of this kind, would be extremely absurd; but that it is this in the fullest and highest sense, is an indubitable truth; and its chemical productions are of the most exquisite description. It is no doubt an interesting inquiry, "How is secretion conducted?" Some have conceived that the question was sufficiently answered by ascribing it to "the action of the vessels;" and pronouncing that action to be different in the different secreting organs. In the use made of this mode of expression, however, the action concerned in secretion seems to have been confounded with the action which physiologists have ascribed to the vessels in propelling the contained fluids. They seem to have imagined that the shape of the undulations, or vermicular motions performed by the parietes of the tubes, impressed the peculiar character on the liquid before it issued from the orifice. Secretion was thus regarded as depending entirely on the mode in which this change of place was conducted. But, when we consider the effect produced, it is too delicate, and enters too minutely into the constitution of the matter concerned, to be explained by a set of impulses comparatively so gross. It must depend on agencies exerted by the intimate molecules of the organs on the matter placed in contact with them, an action resulting from a previous state of mutual habitudes of a chemica nature existing among them, possessed of a minuteness which removes them from any necessary association with the origin of the general impulse by which a palpable change of place is effected. Whether the motion of the fluids in vegetables and animals is derived from capillary attraction, from incessant contractions performed by the vessels, or from contractions performed by the surrounding parenchyma, or by a heart which commands a circle of perpetual distribution and return,—the action of secretion, as well as that of assimilation, must be of a finer kind, wholly independent of it; and, though less known to us in the minutiæ of its laws, more interesting from the peculiarity of its effects, and showing a corresponding peculiarity in its nature.

One more particular inquiry might be moved on this subject: "Whether does the action of the secreting organs merely bring the materials into such a state that they unite, in a certain appropriate manner, by laws originally their own? Or, does this action unite them in a peculiar manner by its own energies?" If the former hypothesis be maintained, that it merely brings them into mutual contact in such a manner as to allow peculiar nice laws of the matter itself to operate, the peculiarity of the action by which such a purpose is accomplished must still be granted to be entire; as the relative aspects which are produced, and which are necessary to the ultimate effect, cannot be obtained by any other means. But we have one set of facts which conducts us a step farther in our conclusions. This is found in the phenomena of contagious diseases. Contagious matter is secreted by peculiar actions. It cannot be considered as animated. It is merely a peculiar chemical compound, and to its chemical composition it owes all its activity. When first attended to, it appears a very singular fact that this matter, coming in contact with another living being, should generate the same set of actions, and the same chain of operations to which it owed its existence. This fact shows, however, that the actions of the system, in forming that matter, do not consist of simply bringing certain molecules into that relative attitude which enables them to coalesce in a particular form (living action thus meeting chemical operation); but it decidedly proves, that the organs give, by their living activity, the *finishing hand* to the compound which they evolve. This compound *must* have the stamp of the living action impressed on it, when we find it prepared to excite the same action in its turn. It proves that living action strictly *implies* chemical changes of diversified kinds, each kind definite in itself; and that these changes do not merely exist at the extremities of the assimilating and secreting apparatus, but extend through the whole range of the living economy.

The great variety of products evolved by the operations of organized bodies gives a wide extent to the boundaries of *chemical* science. It may also be remarked, that it affects in an interesting manner one part of the theory of chemistry,—the doctrine of definite proportions in chemical combination. One of the most beautiful discoveries that have been made in the modern progress of chemistry is, that all the simple elementary substances have certain relative combining weights; that is, certain proportions by weight, in which, or in multiples of which, they unite with one another, and that these relative proportions admit of being expressed by numbers. When the relative numbers are found which express the proportional weights in which a plurality of simple bodies respectively combine with any one body, the same numbers also express their relative weights in combining with one another. These regular effects are believed to arise from differences in the weights of certain molecules of the different simple bodies, when they have reached a particular stage of minuteness,—a stage at which, if they are not strictly indivisible, they are much more difficult of division than larger portions. These molecules are called chemical atoms. Experimental analysis has reduced all bodies to 48 simple principles (including the most rare); and it is from the variety of the proportions and modes in which they are united, that the varieties of compounds, including vegetable and animal products, arise. Some of the compounds which are formed are more close and more difficult of subversion than others. Those which are persistent under the most numerous agencies of external bodies, and under the widest range of temperature, are accounted the closest and strongest. The compounds formed by vegetable and animal life are, generally speaking, least persistent, and therefore are reckoned the weakest; although in this particular they are greatly diversified among themselves. This, we have every reason to believe, arises from a complication in the proportions in which they are made to unite. The firmness of the constitution of a compound commonly depends on the simplicity of its composition. A binary compound, consisting of one proportion or atom of each of its elementary principles, is stronger than a compound consisting of a different proportion. The protoxide of manganese, consisting of one proportion of oxygen to one of the metal, is more difficult of decomposition than the oxides which contain a double or triple proportion of oxygen. Another source of complication is found in the number of elementary bodies which, on any occasion, enter into union. This is not great in the case of organic compounds. Only three are essential to vegetables; oxygen, hydrogen, and carbon; and these three, together with azote, to animals. Yet the compounds resulting from the combination of these four are innumerable. They are almost commensurate with the numbers of the species, multiplied by the kinds of fabric and of product which each species developes. Even when we deduct those substances in which simple bodies different from the four now mentioned are present, the number continues enormous. The gums, resins, and other juices of different vegetables, are all different in their sensible, and, consequently, in their chemical properties. The gelatine, albumen, and oil afforded by different animals, present differences in tenacity, in coagulating or liquefying temperature, and other particulars; showing that, however nearly they approximate, they possess essential differences of constitution. The numerous instances to which this remark applies must depend on a corresponding variety of constitution; and that variety implies great complication, or at least great delicacy. The delicacy may arise from the proportions being very peculiarly adjusted, or from some difference in the mutual distance of the ultimate constituents, or the peculiar attitudes in which they are respectively placed, and which are foreign to their tendencies when the phenomena of life have not intervened: Or, it may arise from the various forms of accumulated binary combinations, which present, in their result, proportions of the elements deviating far from binary, ternary, quaternary, or others which fall under ready calculation. These operations may be illustrated in the following manner.

One atom of carbon may combine with *one* of hydrogen.

Another atom of carbon may combine with *two* of hydrogen.

The two binary compounds thus formed may unite, so as to form one more complicated, which, when reduced to its elements, gives *two* of carbon and *three* of hydrogen.

Oxygen and azote may form similar varieties of combinations with these principles, and with one another. They may also combine with compounds differently proportioned, and previously more complicated;—and these complicated compounds may combine with one another.

The superposition of compound on compound may proceed to any extent. The ultimate size of the atoms being too small for us to ascertain, we know not how many superpositions of this kind they are liable to undergo in order to form the smallest assignable portion of any vegetable or animal compound whatever.

Even when the proportions that are found out by chemical analysis are nearly in correspondence with the relations of the combining weights of the elements to one another, or to their multiples, the body may be complicated in its composition. One series of superposed combinations may tend to remove the quantities of the elements farther from their original proportions, while another may tend to bring them back to these proportions. The structure of the body is not thus rendered less complicated in the end, but more so, notwithstanding the apparent simplicity of the results afforded by the destructive analysis.

On this account, the doctrine of definite proportions is difficult in its application to organic products; and we can entertain little hope that chemical analysis will admit of such improvement as to afford details commensurate with the great diversity of chemical properties displayed. The chemical agency of living bodies exerted in all these cases shows that life involves in its nature a series of changes which have a claim to be ranked by the side of those of Chemistry.

The relation of living functions to chemical operation receives farther illustration from "the chemical influence which external agents exert in modifying the phenomena of life."

We have not many well ascertained instances of substances producing extensive effects over the body, corresponding to their chemical properties as otherwise known. Oil of turpentine, asparagus, and some others, when received into the stomach, affect the sensible properties of the secretion of the kidneys; a result which evidently depends on the transmission of the substances themselves through the excretory organs without complete alteration. In like manner, we have been lately informed that, in a short time after alcohol has been received into the stomach, a portion of it can be obtained from the blood by distillation.

Concentrated acids and other strong chemical corrosives destroy the texture of any living organs to which they are applied.

Few substances applied either to the skin or to the stomach, produce effects obviously analogous to what they do on dead matter, in full compatibility with the continuance of the living functions of the part. One marked instance of this we have, however, in the operation of vegetable astringents. These substances, which are known to harden the dead animal fibre, and which are applied so advantageously for this express purpose in tanning, produce a contraction of the mouths of living vessels, and a diminution of the volume of relaxed membranes. On this principle they are employed to check hemorrhagy from divided vessels, to moderate a discharge from corroded and lacerated surfaces, and to correct that state of the alimentary canal which is the proximate cause of diarrhœa.

Some reasoners on the Animal Economy, and in particular the late Dr Murray in his Materia Medica under the head of Astringents, proceed on the supposition that the relations of active applications to the body are separate from all the other physical powers of the same substances. Hence they find great difficulty in explaining the action of astringents. During the prevalence of the theory of Boerhaave, in which the state of the simple fibre was regarded as of primary importance, and its living properties but little attended to, the coincidence between the agency of a body on the dead and that on the living solid was an exemplification and a confirmation of the prevailing doctrine. But, when the laws of life were studied as a separate subject, and the views of the Boerhaavian school were rejected, it was maintained that the properties of bodies which acted on the system were originally conformable to the laws of life; and such terms as stimulus, in other cases specific agency, were regarded as sufficient to explain them. By some, all specific agency was excluded, and different degrees of intensity and diffusibility of stimulant power were alone admitted. When a conformity was found to take place between the effects of astringents on the dead and on the living fibre, this fact came to be considered as a stumbling-block in the reformed theories of living action. A vital activity, somewhat circuitous in its operation, was now adduced to explain an effect produced on the living body, bearing a resemblance to that of the same substance on a dead body.

It ought never to be forgotten, however, that neither the matter of which a living body consists, nor foreign matter applied to it, loses its chemical properties when they come in contact. It belongs to us to observe whether the result of their mutual operation will be conformed to any that might be anticipated from the other powers of such substances, or from the same application made to a dead body, or will be the reverse, or will be altogether neutral in the aspect which it bears to these other energies. But this is a question which we have no right to answer in any other manner than by a rigid appeal to experiment.

In the case of astringents, the coincidence is sufficiently apparent; and there is not the slightest reason why we should refuse our assent to the proposition that their agency, in these two sets of cases, is precisely the same; that this is an instance in which the living state does not oppose an absolute obstacle to the efficiency of the previous chemical tendencies of the same bodies; and in which the chemical change produced brings after it a state of living action, which admits of ready explanation as the effect of its own chemical nature.

Instead of becoming in itself the subject of any difficulty, this fact should serve to suggest a more correct method of explaining the agency of all substances on the living body. Wherever there is no mechanical impulse, the agency of every substance ought to be regarded as primarily chemical, and the influence of inanimate matter on living action ought not to be admitted in any other acceptation. The ultimate effects of substances are various: but, whatever these are, they ought to be considered as the consequences of a chemical agency, which is, in the first instance, exerted by the substance on the fibres with which it comes originally into contact. It meets with a certain constitution of fibre, and also a state of corpuscular action among the constituent elements of the fibre, depending immediately on the living principle both for its origin and its continuance. This delicate state is affected by the chemical properties of the agent brought in contact with it. It is affected by each substance in its own manner. The remote consequences are sometimes of little moment; sometimes they are important and conspicuous. They consist, at one time, in an increase; at another, in a diminution; and, at others, in an essential change of the function. This change is liable to differences, both in kind and degree, at the surface first affected. It differs in the law by which it is diffused among the other organs, through their sympathizing activity. Sometimes the diffusion is more, and sometimes less extensive. Sometimes there is a diffusion of the *same* kind of effect; at other times there is a coeval production of effects different from one another in different parts of the body. These differences are without end, according to the substances applied, and the previous character and state of the organs. These observations apply to all the powers which therapeutical science employs.

No opinion betrays more grossly the spirit of superficial system, than the opposition which has been made by some modern writers to the admission of specific action. Every action exerted on the animal body is specific. Although the modification of living function produced by any application is not the first effect of the substance applied, it is an appropriate consequence of it. Differences in the feelings excited, in the actions generated, in the secretions formed, in the direction given to the changes of function—all indicate differences in the first chemical effect produced, and depending on the relative chemical powers of the substances applied. In most instances, those effects of external agents which particularly attract our attention, have no apparent coincidence with the known chemical agencies of the acting matter. The different cathartics, mineral and vegetable, would never, from any known chemical or physical property, have been considered as allied to one another, unless they had been found to agree in their action on the alimentary canal. Here they come in contact with a body peculiarly situated. They are introduced into a laboratory, which is the seat of operations of the most delicate kind.

The practical consequences to be drawn from these views are of great importance, as they powerfully urge the necessity of observing with due patience, before we pronounce on the kind or degree of agency of any substance whatever. They teach us circumspection in studying the virtues of the Materia Medica, and preserve us from the precipitance of those who draw their conclusions before they see positive experimental evidence.

There are two modes of thinking which they show to be radically faulty, of each of which I shall take the liberty of stating an example. The first is that of rash general assertion respecting the powers of external agents; and the other that of unreasonable incredulity towards the accounts which other persons give of their experience.

As to the first, it has been maintained by many that the action of all positive applications is the same; and they have given to it the appellation of stimulant. They have conceived it impossible that a substance should *act*, otherwise than by giving an *impulse*; and they have conceived that this impulse must necessarily be followed by some sort of *quickening* of the living functions.

But let us consider, for a moment, the numerous adjustments requisite to the living body. Its functions depend on a definite internal constitution in all the organs, along with a definite set of external circumstances. We know that, if either the one or the other of these is altered beyond a measured extent, the phenomena of life are disturbed or extinguished. This definite constitution is affected, in some part of its surface, by the contact of a foreign body; but there is no general fact which entitles us to presume that an increase of living action must be the result. Let us suppose the simplest case: that one particle of the body applied combines with one of the living fibre. The effect of this may be, to detach that particle from some other particle in the same living fibre, or to diminish the closeness of their union. But that a detachment of this sort should fit it for greater action than it previously exerted, is altogether a gratuitous supposition. It is equally supposable that the former action will be diminished, or that it will be modified in a manner wholly independent of its degree of energy. Considering the fibre in another light, as having received an accession to its animated materials by the combination of a particle of foreign matter, we have no right to pronounce, *à priori*, whether this foreign matter will operate as an incumbrance or the contrary. A foreign particle, in uniting with an atom of a living organ, will probably displace some other atom. Since the greater part of an animal organ generally consists of water, a foreign body combining with the solid materials of a fibre, will, if it does nothing else, displace a particle of water; and we have no *data* for predicting whether or not, by this exchange, the fibre will be fitted to act differently from what it did; and, if it is, we cannot predict in what the difference produced will consist.

If this consideration had been duly adverted to, some doctrines of the modern schools of physiology would have exhibited greater correctness and reserve, or their place would have been supplied by speculations widely different.

In the Brunonian doctrine, all positive applications were considered as stimuli. When reasons appeared for refusing acquiescence in some of its principles, powers of an opposite kind were admitted. These have formed the basis of a doctrine now prevalent in the north of Italy, which has been boastingly styled the New Italian doctrine. Certain substances are considered as primarily inducing a diminution in the activity of the functions. These are called *contrastimulants;* a term which seems to bear the same meaning with sedatives.

The agency of Digitalis has, in this point of view, been made the subject of dispute. Its power of producing a remarkable diminution in the celerity of the pulse has obtained for it a place in the list of contrastimulants with these Italian physicians. Others, imbued more deeply with the Brunonian theory, have exerted themselves in scrutinizing more minutely the changes consequent on the exhibition of this plant; and, having found that an early period of its influence was, in their experiments, accompanied by a *quickening* of the pulse which had been overlooked by others, they proclaim it to be a pure stimulant. The new doctrine, they say, is in this instance overturned; and the radical principles of the Brunonian system are confirmed. To trace with minuteness all the phenomena that occur either as the immediate or remote consequences of any application, is laudable. But to view one set of them as of greater importance than another, in a ratio altogether independent of their relative amount—to view the first as always the cause, and the only cause, of those that follow, however differently proportioned—is to sacrifice reason to hypothesis. The diminished rate of pulsation produced by digitalis is an evident and a remarkable phenomenon; and reasonably claims much greater attention than the slight and fleeting acceleration of pulse which is said to precede it.

Wherever any facts suggest experiments for increasing our store of healing powers, they are usefully employed. But the conclusions drawn are often rash and pernicious. When it was found that digitalis lowered the pulse, it was natural enough to try its efficacy in dangerous disorders which were marked by an obstinately rapid circulation. This principle suggested the employment of it in pulmonary consumption. But it has been too often found, by experience, that a temporary change of the pulse is its only effect, the course of the disease being in no degree arrested. To persevere in it in obedience to an assumed principle under these circumstances, and to disregard the manifest disadvantages which it often brings along with it, is to deviate from the dictates of experience. Some, on the other hand, resolving to confide in its power as essentially stimulant, exhibit it on the principle of keeping up the powers of life at a stage of consumption at which they are supposed to languish. The pertinacity of this confidence sometimes betrays its blindness. It leads to a neglect of really powerful agents which a more enlarged plan of experiment might discover, and even to the neglect of agents already known which attentive practical study might subject to more successful management.

In numerous examples of this kind, inferences concerning the virtues of untried substances are precipitately drawn from a little that is previously known, but which that little does not warrant.

Another and not less frequent error is, that of putting a hasty negative on the alleged powers of various applications, in consequence of the want of a theoretic principle to which they are reducible, or their apparent repugnance to such theories as are entertained.

The reports given are discredited, merely because the substances concerned are not contained in a list of general powers from which such effects might be expected. Sometimes these substances are apparently inert; but it ought to be recollected that substances which are inert in one particular are often active in another. Substances which have no sensible taste exert a powerful operation on the stomach and intestines; and substances which have no sensible operation on these organs exert a conspicuous activity on other parts. Substances which have no sensible effect on a healthy frame exhibit a very different character when applied to one labouring under disease. Hence room is left for every sort of experiment that has not yet been made; and our ears ought to be open to every report which is not in contradiction to the uniform dictates of experience.

We hear it too often replied to the fairest proposals of new therapeutical plans in difficult cases, "What good *can* such applications do?"

It is sometimes asserted, that "we cannot expect any substance to act specifically as an emmenagogue;" that "if any one improves the state of the uterus, it can only be by strengthening the general powers of the system." But any reason which could be assigned why there may not be mineral, vegetable, or animal matters, which will affect that organ in a definite manner in disease, would prove too much. It would prove, that none will particularly affect the stomach, the kidneys, the liver, or the secretions of the skin. Physicians of former ages may have been rash in pretending to have ascertained so many specific agencies in bodies. We know them to be wrong; because they have laid down their *data*, which are demonstrably fanciful. We therefore cannot rely on their authority. We must proceed deliberately to repeat their experiments, and remark the consequences; or to make different experiments of our own. But there is no reason why one specific effect may not be anticipated as well as another.

Guided by these principles, we shall not be unwilling to acknowledge many delicate agencies, which those who believe only in the efficacy of bodies evidently powerful, are disposed altogether to reject.

An example of this delicate agency appears in the peculiar manner in which the human body is affected by aqueous applications, when compared with the operation of mere temperature on a dry surface. No application of heat or of cold, through the medium of the air, has the same effect with the cold and the warm bath. The difference cannot be accounted for by any circumstances in the mode of communicating and abstracting caloric. The accompanying effect of the moisture gives to it a character altogether peculiar. This must arise from the chemical agency of the water on the cuticle, and probably also on the subjacent integuments. The state which it induces over so large an extent of surface diffuses, in the use of the cold bath, a peculiar freshness, and, in the warm bath, a peculiar calm pleasure through the whole body, internally as well as externally.

On the subject of Baths, some maintain that no difference can exist between the salt water and the fresh water bath; because any difference of cooling or of warming powers which may be supposed to take place is readily made up by a slight variation of the temperature of that which is used. No appeals to facts will extort from them an acknowledgment that the saline impregnation can have any efficacy. As it is not a very acrid matter, as the external surface of the human body is endowed with little sensibility, and as no conscious sensation follows the partial application of this substance, they conclude, that all the ultimate benefit ascribed to it must be mere fancy. But a more minute attention to such facts as bear upon the subject will moderate this scepticism. Sea-salt makes an evident impression on the organs of taste. To these organs the cutis vera, though covered with a dense cuticle, is analogous. The cuticle imbibes moisture, and becomes relaxed by it. It also affords passage to substances dissolved in water, and thus gives them access to the sensible fibres of the skin. Perspired matter, and other sordes, allowed to accumulate and remain on the surface of the body, are well known to exercise a noxious influence. The morbid affections which arise from such causes may serve to show us that the skin is not insensible to apparently inert substances; that the influence imparted to it extends over the general functions of the living system; and that, therefore, we are not entitled to pass a sentence of inactivity on any external application. For these reasons the influence of saline and other impregnations contained in aqueous fluids upon the body, when applied to the skin, must be admitted as a general fact; and particular instances of its occurrence should be carefully studied.

On the same principles, we may occasionally adopt with advantage expedients which are employed by persons of the most ignorant and prejudiced characters. Wherever they are harmless, there is no reason for discountenancing a trial of them. We may thus acquire some information which those who act otherwise never can, although we find just ultimate reason for treating the greater part of such expedients as delusions.

It might be thought, on a general survey, that, if the principles now stated have no other practical influence than to inculcate the propriety of cautiousness in drawing our conclusions, they are unnecessary; because this maxim has been well understood ever since the promulgation of the philosophy of Bacon. But if this maxim has in practice been neglected, as it certainly has by many recent writers, the exposition of any leading physical fact tending to impress it more deeply in its application to the present subject, cannot be destitute of practical utility.

The chemical nature of the operation of the greater part of external agents on the system probably appears self-evident when once it is fully stated; but the statement is not superfluous when for want of it delusive doctrines are in any quarter maintained.

The preceding considerations have not merely the effect of repressing forwardness in drawing our conclusions, but that of inspiring activity, because they do not discourage the hope of future discoveries; they forbid us equally to reject any practical expedient with haste, or to admit any with rashness; and it is allowed that an ample field is open for exertion, which those who are concerned in the subject cannot conscientiously neglect to cultivate.

A minute view of the general nature of the agency of external bodies on the animal economy has also the effect of introducing the mind to a more intimate familiarity with the laws of life, and thus imparting a greater interest to all the practical researches connected with it.

II.

Report of Cases treated at the Ophthalmic Hospital, Chatham, communicated to Professor Thomson. By Andrew Smith, M.D.

(Continued from No. LXVIII. p. 375.)

Ophthalmia with Granulated Lids. *—More than half of the patients who came under treatment, were affected with a greater or less degree of inflammation of the eyeballs, complicated with a granulated state of the lining of the lids. They had all been treated for a longer or shorter period, on account of the inflammation, in one or more hospitals, previous to their reaching Chatham; yet much still remained to be done, towards removing the cause which kept up the increased vascularity, and which, judging from the morbid appearances exhibited on admission, did not seem to have been much the subject of previous attention; or at least, if it had, the success of the treatment had not been such as was necessary for eradicating the disease.

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* In making use of the term Granulations, I do not thereby intend to assert that they absolutely are such, although, from having carefully watched their commencement, progress, &c. I am much inclined to consider them in that light.

The increased vascularity of the adnata and cornea, seemed at first view to be the principal affection; but, upon a more minute inspection of the eye and its appendages, the chief site of the complaint was discovered on the inner surface of the lids; and upon this the state of the eyeballs just alluded to, was found to depend, as it disappeared in most of the cases in proportion as the lining membrane became smooth. The degree of inflammation varied very considerably; for in some, only a red vessel was observed here and there extending on the surface of the conjunctiva, or immediately under it; whilst in others they were so numerous and massed together, as to give the whole of the globe an uniform dark red appearance. In four of the number, however, in whom the lids were granulated, there was not the slightest affection of the eyeballs perceptible on admission, although it was afterwards found that inflammation was readily excited, by even the most trivial causes.

The corneæ in most, indeed I may say in all the cases, at least of any considerable standing, had suffered much from disease; they were not only very vascular, but frequently ulcerated more or less extensively, and almost invariably presented an abraded and opaque surface, according to the extent and density of which, vision was in a greater or less degree impaired; in fact, it may be said that many of the patients were admitted blind, as any rays of light which reached the retina were not more than merely sufficient, to enable them to distinguish day from night, and often not that with absolute certainty. The surface of the eyeballs in the majority of instances, presented a dull watery appearance, in some verging to a yellowish hue, which appeared to be occasioned by an effusion of a serous fluid, into the cellular texture connecting the conjunctiva and sclerotica.

Upon everting the lids and examining their inner surfaces, the upper always, and not unfrequently the lower, were found more or less thickly covered with small round bodies resembling granulations or warts, which, in part of the cases, were of a fleshy appearance and consistence; in others, of a hard pale cartilaginous description; and in a third class they were of a soft texture and dark colour, like clots of coagulated blood, and discharged that fluid copiously upon being slightly touched; even in some instances the motion of the lids alone caused considerable hemorrhage.

In a part of the patients, the granulations were dispersed generally over the whole of the inner surface of the lids, whilst in others they appeared confined principally to particular parts of them, such as the *extremities*, inner edges of the *tarsi*, &c. situations where, under any circumstances, they were always most luxuriant, and from which they were invariably most difficult to remove. The first variety, or those which had the appearances of granulations seen on the surface of healthy sores, most readily yielded to treatment; that is to say, they were soonest entirely removed, and a cure effected. The second, or those of the cartilaginous description, were with much difficulty acted upon; indeed they seldom underwent any considerable decrease, till after numerous sharp applications of some one or other of the escharotics, to be afterwards mentioned; and the third class, or those which resembled coagulated blood, though readily destroyed, would often, in spite of every application, attain their original size in the course of *twenty-four* hours; which disposition to sudden regeneration rendered them occasionally the most difficult of the three species to treat successfully.

The motions of the lids, especially when the granular bodies were large, were often very much impeded; and in many instances the patients were unable to raise the upper sufficiently to expose the eyeballs, without the assistance of the fingers. This incapacity appeared to arise, partly from the impediment to motion offered by the rough granulated surface, and partly from a degree of *Ptosis*—the frequent sequel of an attack of acute ophthalmia, particularly where the motion of the lids happens, on account of the violence of the symptoms, to be for any considerable time much restrained. This defect generally disappeared as the cure advanced, although, now and then, it was found necessary to employ remedies, with a view of directly removing it, which will come to be noticed by and by. A greater or less œdematous swelling of the palpebræ was also another not unfrequent attendant on this disease, and no doubt had its share in producing the state just mentioned, as it frequently occurred in individuals affected with the complaint under consideration. Lachrymation and slight puriform discharge, which glued the edges of the lids together during the night, were symptoms for the most part present; though, in a few instances, the latter was not observed till after escharotics had been employed, a practice which was found invariably to increase it when it had previously existed, or to bring it on, when it had not appeared before.

The lower lids, though, as has been already remarked, much less frequently affected than the upper, were nevertheless occasionally found exhibiting the same diseased appearances, but producing much less irritation, in consequence of their more limited motions.

This state of the lining of the lids seemed, in the majority of instances, to have been the result of previous puriform or purulent ophthalmia, although, in several cases, it succeeded to the common simple form of inflammation; and, in a few examples, neither of those varieties, or any other, could be traced to have pre-existed. The latter fact demonstrates to us, that the degree of that morbid action, which is absolutely necessary for the formation of such preternatural growths, is far from being considerable; and that it may sometimes exist in the lining of the lids, without the individual being aware of it, till, from some other cause, an aggravation of the symptoms be produced. From this circumstance, it appeared always advisable to evert the lids and examine their inner surface, when a patient, on admission, was found to have laboured for a considerable time under any of the forms of ophthalmia, or where the disease, though even of short standing, and mild, was attended by a sensation of something rough, like sand or gravel under the upper lids, particularly towards either of the extremities, and with slight mucous discharge; or where, though the last symptoms did not exist, the inflammation had come on very gradually, and without any evident cause.

The lower lid is in general easily everted, simply by applying the extremity of the fore or middle finger close to the edge of the *tarsus*, and gently depressing it, whilst the patient directs his eye to some object immediately over his head; but the eversion of the upper is usually with more difficulty effected. To accomplish it with most facility, the patient must be directed to look at his feet, and then the surgeon, with the thumb and fore finger of his right hand, should it be the right eye that is affected, must lay hold of the ciliæ of the upper lid, whilst, with his left hand, he applies a common silver probe a little above the upper edge of the tarsus, and by means of it makes a gentle pressure downwards and backwards; at the same time, through the medium of the ciliæ, carrying the border of the lid forwards and upwards, by which motion the desired affect will generally be produced. There are, however, cases frequently occurring, in which eversion cannot be thus readily accomplished, particularly in patients who have not perfect command over the *orbicularis and levator palpebrarum* muscles, or when the conjunctival lining is very much thickened. In such states it is often absolutely necessary to employ considerable force; in consequence of which, it will generally be advisable to lay hold of the edge of the tarsus in preference to the ciliæ, as the latter might be pulled out before the object in view could be completed. Force, however, it may be remarked, is always a bad expedient, and was never employed, till the more gentle means had proved ineffectual.

The practice of everting the lids ought always to be tried for a considerable time, in slight cases, previous to attempting it in the more severe forms of the disease, as a peculiar facility is acquired by habit, which does not admit of explanation, yet must be sufficiently evident to every individual who is in the way of seeing with what expedition and apparent ease a person accustomed to perform it will effect his purpose, after others, less conversant in the practice, had been either foiled, or found it necessary to employ no small degree of violence.

Treatment.—The treatment at first was directed, with a view of effecting the removal of every symptom of active disease, which being accomplished, the destruction of the granulations became the principal object of our attention. The former of these indications was effected by the employment of general and local blood-letting, purgatives, washes and drops; the latter, by the application of various escharotics, &c.

When the symptoms of inflammation were found to run high, or the constitution to sympathise much with the local disease, blood was abstracted from the arm; but where neither of those states existed, local blood-letting was, for the most part, preferred. Six or eight leeches were applied to the temples or eyelids on admission, and the bleeding was encouraged by warm fomentations; which means, should the symptoms not be found to give way sufficiently at first, were repeated next day; and during the intermediate period, as well as afterwards, the eyes were washed with a weak alum lotion, and the vinum opii dropt between the lids night and morning. By a steady continuance of this treatment, the disease was in general brought, in the course of a few days, to such a state as would admit of the most essential part of the practice being adopted; viz. the application of remedies suitable for destroying the granulations.

The method employed to effect this, as has been already mentioned, was the frequent application of escharotics to the inner surface of the lids; the chief of which were, the *nitras argenti*, *sulphas cupri*, and *acidum nitricum dilutum*. They were all applied to the same part, and with the same intention; namely, that of producing a more or less considerable slough, according to the nature and severity of the complaint. Sometimes one of them was employed in preference to the others, and sometimes all alternately, as no certain and fixed rules could be observed with respect to their use, for one of them was found to agree with one individual, which had just the reverse effect on another, where, upon the most minute examination, nothing but the strictest similarity of morbid appearances and constitution appeared to exist. As illustrative of this, I may merely mention, that I have several times seen the application of sulphate of copper even mildly to the lids of a patient whose constitution was scrophulous, produce violent active disease, whilst the same individual bore a sharp touch of the nitrate of silver, not only without injury but with material advantage, and, *vice versa*, apparently under similar circumstances. It must however be added, that the sulphate of copper commonly produced less irritation than the nitrate of silver: But, to have done with such remarks, I shall proceed to describe the particular advantages and disadvantages of each, as far as could be learned from their use, in *one hundred and forty-two cases.*

Nitras Argenti.—This caustic was found to be most useful in cases where the granulations were either partial, or thinly scattered over the whole surface of the lid, as, to them, it could be applied with more ease and certainty, than either the blue stone or the diluted acid. In cases, also, in which there was a profuse lachrymation, and much tendency to active disease, the remedy under consideration was found to be a more safe and effectual application than either of the others; more particularly, however, than the sulphate of copper, as it did not require the same degree of friction and force that the latter did, in order to produce the same effect; neither was it found so apt to become detached and dissolved in the lachrymal fluid, and thereby act as a violent irritant to the eyeballs. It was also that of the three which was applied with most effect to those cartilaginous granulations which resembled the teeth of a file, as it produced an immediate effect; whilst the sulphate of copper could scarcely be made to act, on account of the dryness of the parts, and the acid produced but slight effect, from their hardness and insensibility.

Sulphas Cupri—This remedy was found best adapted for the destruction of those red fleshy granulations, upon which there was just sufficient moisture to effect the solution necessary to ensure the full extent of its escharotic qualities. Those, frequently, by two or three sharp applications, were entirely destroyed; and where the parts could bear it, a pretty hard friction no doubt tended to accelerate that process. As both of the above remedies are easily soluble in water, and as there is considerable chance of particles being detached by the rubbing, particularly of the last, it was found highly necessary to omit no precaution by which the eye could be freed from all possibility of suffering from any such unnecessary and severe stimulants. For this purpose, it was found of advantage to wash the eyeball, and parts to which the remedy had been directly applied, with some simple or medicated fluid, immediately after the operation had been finished. Simple tepid water was, upon the whole, most generally employed, and, where due caution and attention were observed, certainly was found sufficient of itself, without any addition, to remove all the causes of irritation, so particularly to be dreaded. Lime-water was another fluid occasionally employed, and no doubt was at first suggested, on account of the chemical decomposition, and insoluble compound which is formed, by mixing solutions of the sulphate of copper and that earth together, thereby doing away with every thing like a chemical stimulant. As far, however, as my experience goes, I can safely affirm, that inflammation was equally frequent after the ablution with water containing lime, as after that with the same fluid in its simple state, when the same care and accuracy was bestowed on the process with each. Almond oil was also at times besmeared over the lid after the washing, as a still farther precaution; but it seldom if ever appeared, in my opinion, to be absolutely necessary, or productive of any benefit.

The mode in which the escharotics were applied, and the way in which one or other of the washes was used, I shall now proceed to describe to you. The patient was placed on a chair opposite a window, and the lid everted in the manner already directed; after which, if there was any mucous discharge lying on the granulated surface, it was cleared away, or if overrun by tears, they were dried up by a small piece of lint or sponge, and then the application of either of the caustics was made, according to circumstances. If the state of the disease called for the use of the argentum nitratum, a small portion of that substance, smooth, and gently rounded at the extremity, was fixed in a quill, or *porte crayon*, and applied to the granulated bodies; the effects of which were immediately evinced, by the formation of a dense white slough, and a sensation of burning in the parts to which its action extended, followed by a violent action of the orbicularis muscle, and a profuse discharge of tears. Where the granulations happened to be pretty close together, it was generally drawn gently along their surface; but where they were thinly scattered over the whole of the lining membrane, it was applied by touching those particular points, in consequence of which, many small sloughs, instead of an extensive one, were formed.

When the sulphate of copper, again, was the remedy made choice of, it was applied by rubbing the surface of the lids backwards and forwards, from one extremity to the other, with a polished piece of that substance, fixed in the same way as the nitrate of silver. The friction was continued till a more or less opaque slough was formed, which required in some a much longer period than in others. When there occurred during the operation considerable hæmorrhage, or a profuse discharge of tears, it was found necessary to sponge the surface of the lid occasionally, for the purpose of drying it, as either the one or the other of those fluids was found to carry off the sulphate so rapidly, as to lessen very considerably its action on the diseased parts. After the desired slough was thus obtained, the lid was still kept everted, and its surface well washed with one or other of the fluids already mentioned. To accomplish the last intention, the lower lid, provided the treatment just described had been directed to the upper, was gently depressed by the finger of an assistant, so as to uncover as much of the eyeball as possible, and then the operator, with the hand not employed in keeping the lid everted, took his sponge well filled with one of the washes, and pressed it in such a situation as to make the fluid fall directly on the everted lid, from which part it became afterwards generally diffused over the surface of the globe of the eye, and latterly on the lower lid. By managing the washing in this way, so as to keep up for a short time a continued descending stream, all portions of nitrate of silver or sulphate of copper, which might have accidentally become detached, were now removed. The patient was then sent to his ward, with directions to bathe the eye for a longer or shorter period with tepid water, according to the severity of the pain or smarting induced by the action of the escharotic employed. The pain was found to vary in degree and duration, according to the remedy made use of, or the degree of severity with which it was applied, but it seldom lasted longer than a few minutes; and frequently, more especially when the nitrate of silver was used, it was merely momentary. In several cases, however, it returned again, after the lapse of an hour or two; but then, instead of being the immediate effect of the caustic substance applied, it was only one of the attendants of an active inflammation which now and then was found to supervene, upon the treatment just described, but which was, in every case, easily overcome by local blood-letting and warm fomentations, either with simple water, or some medicinal lotion.

In cases in which ulcerations or abrasions of the corneæ existed, the sulphas cupri seemed often to be prejudicial, not only increasing both of those states, but also frequently inducing active inflammation, which probably arose from the action of a portion of that substance suffering solution during its application to the diseased linings. In no case, however, did any thing serious occur, though, at the same time, I think sufficient injury was done in some, to warrant the rejection of that application under such circumstances, and to have recourse to either the nitras argenti or the diluted nitric acid; the mode of applying the last of which, and its peculiar advantages, I shall now proceed to describe.

The *nitric acid* was generally applied diluted with four parts of water, by means of a camel hair-pencil, and was found particularly well adapted for the destruction of the soft spongy granulations, as it possessed not only an escharotic, but also an astringent effect; and, by being applied in a state of perfect fluidity, it got better into contact with them than either of the others. When thus diluted, it possessed likewise the additional advantage of producing but a slight slough, which was seldom found to prevent its daily application; a quality essentially necessary for the remedy to be used in the treatment of this form of disease, in order to suppress the growth of such spongy formations.

It was also found very useful in the other varieties of granulations, after one of the more energetic applications had destroyed the principal part of the disease; and indeed, from what I have seen, I think it ought to be preferred in all cases where the granulations have either not attained any considerable size, or where they have been nearly removed by the lunar caustic or the blue vitriol, in consequence of the slight eschars which it produces being less apt to hurt the conjunctiva, than the more extensive ones occasioned by either of the two last mentioned escharotics. The facility and certainty with which it is applied, and the little, if any, mechanical irritation which is required, in order to insure its effects, are other conveniencies which it has to recommend it.

The same process of ablution was also practised after the employment of this acid, as after the other caustic substances, and conducted according to the plan already detailed.

An œdematous swelling of the lids was a frequent consequence of the use of all of the escharotics, yet more particularly of the sulphas cupri and nitras argenti; but it was found, in the majority of instances, to subside spontantaneously in the course of a few days. A slight soreness of the inner surface of the lids, particularly on motion, was experienced for a few days after each application; and also for nearly the same period, a slight increased redness of the surface of the eyeball was remarked, both of which, in almost every case, gradually abated without the use of any remedies.

The length of time required for the detachment of the slough, varied according to its extent and depth; but, for the most part, it happened between the second and fifth day, and was accompanied, as well as followed, by a considerable increase of puriform discharge. During that period, various drops were occasionally instilled on the surface of the lid previously everted, such as the solution of nitrate of silver, vinum opii, and liquor plumbi acetatis, with a view partly of acting on the disease, and partly of expediting the separation of the dead matter.

After the last object was effected, the solution of nitrate of silver was still continued, and the eye and lids were occasionally washed with a weak alum or sulphate of zinc lotion, which means usually, in the course of a few days, removed any soreness and increase of inflammation which might have been produced, and brought the parts into such a state as would safely admit of a repetition of the same remedy, or one of the others, according as it might be judged requisite. This mode of proceeding was steadily and firmly persevered in till all marks of the granulations were completely removed; and then, whatever other symptoms remained became the objects of treatment.

When the lid was everted and examined after the first eschar was thrown off, its surface was found to be very red, villous, and slightly ulcerated, with here and there small quantities of a puriform fluid, collected in any little depression which might have accidentally been formed, either during the progress of the disease, or by the action of the remedies employed for its cure. The same appearance was observed after each successive application, but always in a less degree, diminishing pretty nearly in the same ratio as the diseased substance, and only disappearing when it was entirely removed. The accomplishment of that object was marked by a great change, both in the feel and appearance of the inner surface of the lid, it being by that time quite smooth, firm, and generally of a pale colour, with here and there small red vessels distinctly ramifying and anastamosing in the substance of the lining membrane, or immediately under it; whilst the different motions of the palpebræ were performed with an ease and facility not for some time experienced.

Before the cure had thus far advanced, the vascularity of the eyeball and the nebulosity of the cornea, were both found, in the greater proportion of instances, to have decreased considerably, and the degree of vision to have increased; indeed, in many cases, the two first symptoms entirely vanished with the affection of the lids, without any particular treatment, although, in others again they continued, and demanded a distinct treatment, In some the increased vascularity of the conjunctivæ and corneæ remained, whilst in others the nebulous state of the latter alone existed, but in both states the plan of treatment pursued was nearly the same, and consisted in the constant use of astringent and stimulating applications, such as the solut. argent. nitrat., vinum opii, liquor plumbi acet., tinct. aloes et myrrhæ, tinct. benz. comp., aut pulv. e aloe hyd. submur. et sacch. alb. composit., varied in strength according to circumstances.

The solution of nitrate of silver was one of the remedies which was most frequently employed, and was used sometimes at first in the proportion of two grains to an ounce of water; but, for the most part, it was soon increased to six grains, or even more, and dropt between the lids night and morning. It was found to answer best where there was a slight puriform discharge, or where excoriations or ulcerations of the lining membrane of the lids, or of the surface of the cornea, existed, or in cases where that tunic was affected with a slight general nebulosity, as in such forms of disease it often removed all the morbid appearances in a very short time.

The vinum opii was not found so generally useful in the chronic vascularity remaining after the removal of granulations, as in the passive stages of the simple ophthalmia, its action not appearing to be sufficiently active for the cure of the general run of cases. It was however found, in a few instances, after most of the other remedies had failed, to remove a troublesome relaxation of the tunica conjunctiva covering the eyeballs, which was now and then found to stand out, after the more considerable symptoms of disease had given way.

The liquor plumbi acetatis, either pure or diluted with water, was found to be a very useful remedy in the same form of disease as the vinum opii, and also where the relaxation extended to the lining of the lids, and was coexistent with a considerable degree of chronic inflammation and puriform discharge. It was found to prove very hurtful in all cases where either abrasions or slight ulcerations of the corneæ existed, as in them it produced a scale on their slough, * of the same extent as the loss of substance, which was never without very great difficulty removed; and in two or three cases that could not be effected.

Tinct. aloes et myrrhæ et tinct. benz. comp. were employed occasionally, more for the purpose of changing the action pro-

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* My attention was first particularly directed to this occurrence by Staff-Surgeon Lindsey, whose acuteness of observation, zeal, and sound judgment, so well qualify him for the practice of that branch of the profession which he follows, with honour to himself, and great advantage to the British army.

duced by the liquor plumbi acet., than on account of any specific effects they were found to produce.

The compound of aloes, calomel and sugar,* was used in a great number of instances, and with very marked advantage, for many cases which had withstood one or all of the other remedies, yielded readily to its continued use. It was found of greatest utility in removing nebulosity of the cornea, although often it produced also much diminution of the vascularity of the eyeball; though, where the latter existed to any considerable degree, it was latterly but seldom employed, as it was found at times to increase it, and even give rise to an acute attack of inflammation. A general dimness, or even a circumscribed dense opacity of the cornea, remaining after the increased vascularity had been in a great measure removed, were the symptoms found to be most under its control, as they often suffered a very considerable diminution in the course of twenty-four hours after it was first used; and the patients expressed great astonishment at the sudden improvement of their vision.

Under such circumstances, when it was cautiously and regularly persevered in, it seldom failed to answer our utmost expectations. It was used by making a portion of it fall on the anterior part of the eyeball (the lids having been previously well opened), from a small piece of wood hollowed out like a spoon, or a cut quill, every morning, and allowing it to remain there under the palpebræ till washed away by the tears. When it did not occasion much pain, or after using it for some time, the patient was desired to shut the lids the moment it was applied, and keep them so for fifteen or twenty minutes, by which method its effects on the cornea were more certainly obtained. When this application was found to occasion too much action, it was weakened by adding an additional quantity of sugar, or, when too mild, it was rendered more energetic by increasing the proportion of calomel.

When a degree of *Ptosis*, or inability to raise the upper lid, was a sequel of the disease we have been describing, it was, in all the instances, readily removed by rubbing the integuments of the eyebrow and lid with a liniment composed of common oil and tincture of Spanish flies, in the proportion of an ounce of the former to half an ounce of the latter, two or three times a day, or by applying the common sulphuric æther to the same parts night and morning. In conjunction with the foregoing treatment, blisters were occasionally applied either to the temples, nape of the neck, back of the ears or arms, and were found to be often of considerable advantage when they were kept discharging for some time.

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* ℞ Hydrarg. submur. ℥v.
Aloes socot. ℈viij.
Sacch. albi. ʒij. M. ft. pulv.

The general remedies employed were similar to those already detailed under the head of Chronic Ophthalmia.

During the latter part of the treatment, the patients were allowed to walk freely about in the open air: indeed, the benefit which resulted from such exposure, when the weather was moderate, was often found to be so considerable, that it was laid down as a rule at the Establishment to send those patients out of hospital in whom the inflammatory part of the disease was nearly removed, but the nebulosity of the cornea continued, without suffering much change from treatment. This proceeding we seldom had occasion to regret, especially where steadiness and sobriety marked the conduct of individuals; but even under reverse circumstances, where the characters were of the most dissipated and debauched description, the corneæ were often found to clear rapidly, and the remains of chronic inflammation, which existed when they were discharged, to suffer a speedy removal.

In stating the latter circumstance, I by no means intend to say that such a mode of proceeding was not highly reprehensible, and frequently followed by severe and even fatal relapses; but I mention it merely to show, that the system pursued, and which was adopted from our experience of its utility, was, even under the most unfavourable circumstances, frequently followed by the most salutary effects. Dry weather, with a moderate degree of heat, and a slight breeze of wind, proved most beneficial; in fact, the coexistence of those three qualities appeared necessary, in order to ensure success, and consequently regulated in a great measure the periods of discharging; as, if they happened to be sent out in dull, rainy, or cloudy weather, they were nearly certain of returning with relapses; indeed, such occurrences could scarcely be guarded against, even in hospital, under similar circumstances.

This subject, viz. the influence which the weather has in producing, modifying, retarding or promoting the cure of diseases of the eye, has been hitherto too much neglected; and I am confident, from what I have seen myself, that such a train of inquiry could not fail to be of material consequence to the practical oculist; and might discover to him methods for diminishing the frequency of such complaints, the greater part of which, no doubt, derive their origin from particular states of the atmosphere.

Lippitudo.—Fourteen patients labouring under this disease were admitted into hospital. In four of them, it was complicated with a good deal of pain, and active inflammation of the eyeballs; but in the other ten, it was mild, and confined entirely to the tarsi, and lining of the lids. In nine of the number, the attack was of but recent occurrence; whilst, in the remaining five, it was of considerable standing, having existed, as far as could be ascertained in one of them, for fourteen months; in two, for three years; in one for four, and in the last, for nineteen years; and was said to have been the sequel of a previous attack of acute ophthalmia.

The general symptoms were, more or less extensive excoriations of the edges of the tarsi; increased redness and thickening of the palpebral lining, with mucous discharge, which glued the edges of the lids together during the night; slight soreness towards the commissures of the palpebræ, particularly experienced on motion; itching, and an occasional hot, burning sensation towards both canthi, when the eyes were, for any considerable time, without being washed; whilst the general appearance of the organs of vision themselves, indicated an unpleasant degree of weakness and uneasiness, more easily conceived than described.

The cures were simple, expeditious, and very effectual. In the four instances alluded to, which were accompanied by slight ophthalmia, and in one or two others where the redness of the lining of the lids was very considerably increased, a few leeches were applied to the upper part of the cheek or temple, and the eyes fomented for a day or two with a tepid Goulard lotion; after which, the solution of nitrate of silver, six grains to an ounce of water, was dropt between the lids twice a day, and the edges of the tarsi besmeared an hour afterwards with dilute citrine ointment, or one compounded of red precipitate, prussiate of iron, &c., * by means of a common camel hair-pencil.

If the latter was employed, which was generally done when the disease was either very indolent or found to be of long standing, as its effects were more stimulating than those of the other, it was allowed to remain half an hour, or even longer, in contact with the diseased parts, and then washed away by tepid water. By this time the inflammation of the parts to which it had been applied was generally pretty considerable; but that appearance, in all the cases, now vanished, where the remedy was not actually too strong. When the increased redness thus occasioned did not suffer a spontaneous renewal, it was judged a sufficient reason for weakening it considerably, if not for discontinuing it altogether.

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* The exact strength has, at present, escaped my recollection; and as I have not the means of ascertaining it at this moment, I must refer you to my letter, which will soon follow this communication.

When the dilute citrine ointment was preferred, it was generally allowed to remain in contact with the edges of the lids, till washed away by the lachrymal fluid. Whichever of the two was employed, it was found absolutely necessary to increase its strength after being used for some time, in order to ensure a progressive amendment.

In the cases where no marks of increased vascular action were exhibited on admission, the employment of the drops and ointments just described was commenced directly upon the patient being taken under treatment; and, by continuing them regularly, with proper attention to the bowels and personal cleanliness, the removal of the disease, in all the cases, was effected in a few days.

Psorophthalmia.—Of this disease four examples occurred, all of which were of a chronic description; in three both lids were affected, whilst, in the fourth, it was confined to the lower. In the first number, the edges of the tarsi, particularly the lower ones, were thickly studded with small ulcerated points of considerable depth, discharging a thick yellow unctuous matter, which, if not regularly washed away, soon concreted into small little scabs on their surface; and in the fourth, the disease, as has been already observed, was confined to the lower lid, but affected its whole internal surface, and was attended by such a degree of thickening, as to cause nearly a complete *ectropion.* The vascularity of the conjunctival lining was, in all the cases, much increased; and the patients complained of soreness and stiffness on moving the lids, which, in consequence of the dryness of the discharge, were found in general adhering together in the morning. In none of them were the eyeballs at all affected.

In the treatment of this complaint, various washes and ointments were tried on admission, but without any material advantage; for the only way in which it appeared possible to cure it, was by destroying effectually the diseased surface, by the application of some caustic. The nitrate of silver in substance was the one usually employed, and was applied by carrying its extremity along the whole ulcerated surface. After the slough thus formed was thrown off, a strong watery solution of the same substance was instilled night and morning between the lids, which, with the use of the ointment of prussiate of iron, as described under the head of Lippitudo, effectually removed all diseased appearances.

(To be continued.)

III.

Case of Hydrocephalus. By R. Hood, Surgeon, Ayton, Berwickshire.

In September last, being requested to visit Mr D——'s son, aged three weeks, I found him screaming violently, affected with febrile symptoms, and squinting. The application of the usual remedies did not alleviate his trouble; and, after the lapse of eight or ten days, his head appeared to be softer and larger than usual. The febrile symptoms and squinting gradually left him; but his head continued to increase in size. Diuretics were tried without benefit; and an attempt to repress the swelling by bandaging the head, brought on fits, which, however, left him on removing it; and his body now, from being very emaciated, gained flesh; he even appeared to be in tolerable health. In this state he contined several months; and, by the end of March, the bregma was found to be very large, reaching to the temporal bones at the sides, and superciliary ridges in front, in which space fluctuation was very perceptible. Conceiving that the child might be benefited by having the water removed, and no peculiar symptoms indicating any quantity of water to be lodged in the ventricles or within the brain, nor that viscus to be particularly diseased, tapping was proposed to the mother; at the same time explaining the extreme delicacy of the operation, and the dubious issue, should more water be found lodged within the brain, after that on the surface was drawn off. She consented to have it done, as the only means left of saving the child. Accordingly, on Monday the 9th of April, a puncture was made into the left side of the bregma with a small trocar, by which about ℥vi. of a limpid fluid run out. I stopped the flow two different times, for a short space; and the sides of the head were supported by Mr Landell, surgeon. The child cried during the operation; but no fainting or convulsions ensued. The head was next bandaged, after the manner represented in Heister's plates, for water of the head; and the mother directed to hold him, for some time, in the horizontal posture. The fluid was found to contain minute quantities of sulphuric and phosphoric acids, with a greater proportion of muriatic, all neutralized; likewise minute portions of lime and magnesia, with mucus and gelatine in abundance.

Tuesday 10th.—Vomited a short while after the operation yesterday; started at times through the night; slept little; sucked as usual; pulse and heat natural; much wet has come from the wound, and continues to exude. Had a cathartic on Monday, which has operated. Head measures one and a half inch less than before the operation, when its circumference was 21½ inches.

Wednesday morning, 11th.—Has passed the night as well as ever he did in his life. Much wetness from wound.

10 o'clock, P. M.—Has taken a violent screaming. Pulse quick. Ordered to be bathed, grs. ii. ss. of calomel to be given, and the bandage to be removed.

3, P. M.—No better; ordered to be leeched.

Thursday, 12th.—Has passed a restless night. Pulse very quick; takes fits; pupils dilated. Medicine operated; ordered a blister to be applied to the nape of the neck.

2, P. M.—Blister has risen. He is seldom out of a fit; constant rolling of his eyes, but in unison. Pulse very quick, with irregular and convulsed breathing. Died at 9 o'clock at night.

Dissection.—The bones of the head were very soft, and readily cut with a knife. There were no traces of inflammation in the dura or pia mater, not even at the puncture, which had only pierced the former, and was still open. The surface of the brain appeared like a soft jelly swimming in water, and, when its proper tunics were cut, dropt over the sides of the head. A portion of the left hemisphere being swept away rather than cut, a transparent sac was discovered occupying the situation of the lateral ventricle, but including the anterior and posterior cornua only, the inferior containing another distinct sac of a similar fluid. The right hemisphere contained another sac that, when cut into, threw out a large quantity of a clear fluid, and was contained within the lateral ventricle of that side, communicating by large openings, through which the finger readily passed into the third and fourth. No water was found in the fissure of the septum lucidum, which was of a firmer consistence, as were most of the centrical parts of the brain. The nates and testes were converted into a hard tumour, which contained about a tea-spoonful of pus, not confined in any well defined sac, and apparently the product of recent inflammation. This I suspect to have been the cause of the child's death. The inferior parts of the cerebrum, and likewise the cerebellum, approached nearly to a healthy state. About a pound and a half of fluid was collected, and the sacs in which it was contained were of a smooth, firm, and tough structure; attached to the cerebral mass at their under, but unconnected at their upper, surface.

By the operation, the water situated between the brain and dura mater only was drawn off; and it is evident, from the various sacs, how difficult it would have been to have punctured the whole, especially as neither their size, situation, nor even existence, could be accurately known previous to dissection. I have had several opportunities of examining the disease in sheep, known by the name of Sturdy, and find it very much resembles hydrocephalus in the human species. In one, where the water was drawn off by a trocar (the bone is rendered so thin immediately over the water as to be readily pierced), the sheep died in a few days; and when the brain was examined, it was discovered that the point of the trocar had injured the brain, and brought on inflammation of its meninges. In this, as well as some others which I examined after death, water was always found within the brain, and sometimes in sacs, forming indentations deep into its substance. Sufficient water may be on the surface of the brain to cause perceptible fluctuation, yet not enough to receive the point of the trocar beyond the canula; and the consequence is, the meninges of the brain, or the brain itself is injured; a circumstance which is certainly always to be avoided if possible. I should apprehend that the safest method is to make use of the scalpel, as in trepanning, and puncture the dura mater cautiously with a lancet, by which the water will be safely evacuated. Neither faintings nor convulsions have occurred at all in the recent cases, nor are they much to be dreaded, and may always be avoided by a proper degree of pressure: And the admission of air does not seem, from Mr Lizars's case, to be of any consequence. When water is lodged within the brain to any extent, (a fatal circumstance which I am afraid attends most cases of this disease), I consider the case as nearly hopeless; conceiving that, however much the upper portion of the brain may be meddled with now and then, injury done to the central parts produces terrible effects, if we may reason from the analogy of inflammatory attacks. The necessary collapse and distention of the sacs, should even the puncturing instrument avoid every vital part, would run mighty hazard of producing inflammation. In this case, we see almost the whole of the upper part of the brain disorganized, and a large collection within the viscus itself; but this had accumulated gradually, and its upper roof had as gradually yielded, so that circumstances remained much as they were; but no sooner do the corpora quadrigemina become affected, than the consequence is fatal to the child. Nutrition, assimilation and perception, were carried on and excited with a lb. i ss. of fluid in the ventricles, over and above what was upon the surface; but most of the central parts were entire, until the tubercula quadrigemina was attacked, when death followed.

I have been induced to forward the above case for insertion in your valuable pages, chiefly with a view to the accumulation of facts necessary to the obtainment of the requisite knowledge of a disease hitherto so fatal.

IV.

Case of Transposition of the Abdominal Viscera, usually denominated Monstrosity, observed in a Child six weeks old. By William Campbell, M. D., Fellow of the Royal College of Surgeons, Edinburgh, and Lecturer on Midwifery, &c.

Dear Sir,—Should you deem the following account of this case of transposition of the abdominal viscera, with a drawing of the relative situation of the parts, worthy of a place in your valuable Journal, I shall feel much obliged by your inserting them. I am the more anxious that the case should be published, not only on account of the unusual appearances met with in dissection, but also from the length of time which the child continued to live under such circumstances. * My friend,

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* The occurrence of this case, as well as the probability of the child continuing to live under such unusual circumstances, having been called in question by some of the Profession in this city, I beg leave to cite the following cases to show, that similar examples have been repeatedly met with by others.

In the 22d Vol. Philosophical Transactions, a case is related by Sir Charles Holt, for the year 1701, which resembles the present in every particular, except that the infant lived for two months, and enjoyed the functions of both lungs. It always breathed with much difficulty, however; and when the hand was applied to the left side of the thorax, a creeping sensation or motion could be distinctly felt underneath, which was thought to be occasioned by the vermicular action of the intestines. In the 2d Volume of Dr Fothergill's Works, a similar case is detailed; but the change in the situation of the viscera was by no means so considerable. The child, which was a female, lived for ten months. There is a remarkable case of transposition of the thoracic and abdominal viscera related in the Philosophical Transactions for the year 1788, by Mathew Baillie, M. D. The subject of the case was a male, near 40 years of age, " brought for dissection, in the common way, to Windmill-street." In this case, the right lung was divided into two lobes only, while the left lung was divided into three lobes. On opening the pericardium, the

Mr Lizars, lecturer on anatomy and physiology, who opened the body, favoured me with the accompanying Drawing, which is a correct representation of the situation of the parts.

Mrs C., the mother of this extraordinary production, lives in the Grass-market, where, for the last fifteen years, she has, by persevering industry, gained her livelihood by carrying water up stairs to the better families residing in that quarter of the town. This woman remained single until she had attained her 41st year, when she married her present husband, who, by account, is two years younger than herself. She conceived soon after marriage, but aborted between the third and fourth month of gestation, in all probability from her laborious employment. She soon after conceived a second time, but was equally unfortunate, for she parted with the conception about the end of the fourth month. She very soon, however, became pregnant a third time, and was so fortunate as to carry forward the conception to the full time, when she was delivered, by a contemporary lecturer, of a

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apex of the heart was found to point to the right side, nearly opposite the sixth rib, and its cavities and vessels were completely transposed. There was also some irregularity in the disposition of the thoracic nerves. In the abdomen, the liver was situated in the left hypochondriac region,—the small lobe towards the right, and the great lobe in the left. The stomach and spleen were situated on the right side. The intestines and biliary ducts were likewise transposed, as well as some of the abdominal vessels. A case is related in the Medical Records and Researches, by Mr A. Cooper (now Sir A. Cooper), where a portion of the intestines was found in the cavity of the thorax. The subject of the case, a female, lived till she was upwards of 20 years of age. There are also some extraordinary cases of transposition related by foreign authors. In Morgagni Epist. Anatom. Medica, LIV, Sect. 11, a case is mentioned, on the authority of Leprotte, where a part of the colon was found in the thorax, passing through the diaphragm at its attachment with the ensiform cartilage;—the patient, a male, lived to an advanced age. Bartholinus and Clauderus both mention cases, where the stomach, omentum, pancreas, duodenum, and colon, were found in the left cavity of the thorax. In the Histoire de l'Academie Royale des Sciences for the year 1729, Vol. I, p. 14, Chauvèt relates the case of a Lieutenant-colonel, where the stomach, spleen, and colon were found in the left thoracic cavity, passing through an opening with a cartilaginous margin to the left side of the spine; and the author, I think, very properly concludes, in consequence of the margin of this opening being cartilaginous, that the viscera must have been so transposed from the first formation of the individual. Riverius, in his Observat. Med. Cent. iv. Observ. 67. and Bonetus, in his 2d Vol. p. 103, both mention the case of a young man of 24 years of age, who had been prescribed an over-dose of some preparation of antimony by a quack, for the cure of intermittent fever. He died in consequence, and the stomach was found in the right side of the thorax. Vetter, a German author, relates, in his Aphorism. Patholog. Anat. p. 144, 145, the case of a healthy old man, where the whole small intestines passed immediately behind the cava, through a preternatural round hole, into the left cavity of the thorax, and *completely compressed* the lungs of that side. In the same work is recorded the case of a child six weeks old, where the whole left half of the diaphragm was wanting, and almost all the abdominal viscera had passed into the thorax.

still-born child, in January 1820. The fœtus, I presume, was destroyed during parturition, probably in consequence of having suffered the process to be too long protracted. When delivered at the above period, she was reputed to be upwards of 50 years of age; but, from her own statement, she is now only 43 years —although, to appearance, she has the constitution of a woman upwards of 50, for there is not a single tooth in her head. From the birth of the still-born fœtus just alluded to, until she again fell with child, nearly seven months elapsed; and she did not apply to me till she had been five months pregnant, which was in January last. During the whole of this pregnancy, she continued to make herself useful to her neighbours, by carrying water; and neither met with any hurt, nor any other occurrence, to which could be attributed the appearances that I am about to relate.

Early in the morning of May 29th, she fell in labour of this her fourth child, and was delivered about 3 in the afternoon by one of my assistants, Mr Rose, of a stout male infant. During labour, there was a copious discharge of the meconium, which made me apprehensive that the fœtus was weakly, or too long exposed to pressure; so that I felt somewhat anxious for the conclusion of the process, lest the poor woman might be equally unfortunate on this as on the last occasion. When the fœtus was expelled, it laboured under some slight degree of torpor, from which it very soon recovered. It was large, well formed, but had a dull inanimate appearance. It was always observed to be remarkably fretful, to become quite of a cerulean colour when it cried, and to retain the same dull inanimate aspect during life which was so conspicuous at birth. It sucked well, took spoon-meat readily, and swallowed with ease. It was never seen to vomit. It had regular passages by stool and urine, but not without frequent laxatives. The stools were sometimes greenish, but in general they were quite natural. It slept as well as infants usually do, but always breathed with great difficulty. This infant throve very little, and died on the 2d of July, labouring under partial convulsive fits for twelve hours previous to its decease.

DISSECTION.

For greater accuracy in recording this case, I requested that experienced anatomist, Mr Lizars, to pay particular attention to the situation of the viscera; and he has been so kind as to favour me with the following statement.

When the body was laid out for dissection, there was no indication of any unusual formation; the abdomen only appeared a little flaccid. An incision was made from the top of the sternum to the symphysis pubis, cutting at once through the abdominal parieties; and a lateral one on each side, from the umbilicus to the lumbar regions, when we were struck with observing only the liver in the abdominal cavity. On a more minute examination, we found a small part of the sigmoid flexure of the colon, and the cardiac portion of the stomach—these communicating through a preternatural opening in the diaphragm with their respective continuations, which were contained in the left cavity of the thorax. Besides the liver and gall-bladder, the cardiac portion of the stomach, and the termination of the colon, there were in the cavity of the abdomen, the kidnies, covered with the peritoneum.

The rest of the stomach, the small intestines, and the remainder of the colon, with the spleen, pancreas, and great omentum, were found in the left thoracic cavity. These were further displayed by removing the sternum, with a considerable portion of the ribs on each side, as is elucidated in the Drawing. The mediastinum was pressed to the right side, so as to describe an arch of a circle. Equally were the heart and left lung pushed by the abdominal viscera to the right side of the mesial line. The left lung was compressed into little bulk; and, excepting a small portion of its surface, it had never been inflated—it resembled the thymus gland.

REFERENCES TO THE DRAWING.

a, *a*, *a*, *a*, *a*, The parieties of the abdomen.—The three upper ones are placed on the ribs, to which the diaphragm is attached; the two lower on the abdominal muscles, which are seen lined with the peritoneum.

b, *b*, The right and left lobes of the liver.

c, The umbilical cord.

d, The gall-bladder.—Its duct seen running along the surface of the stomach, to reach the duodenum in the cavity of the thorax.

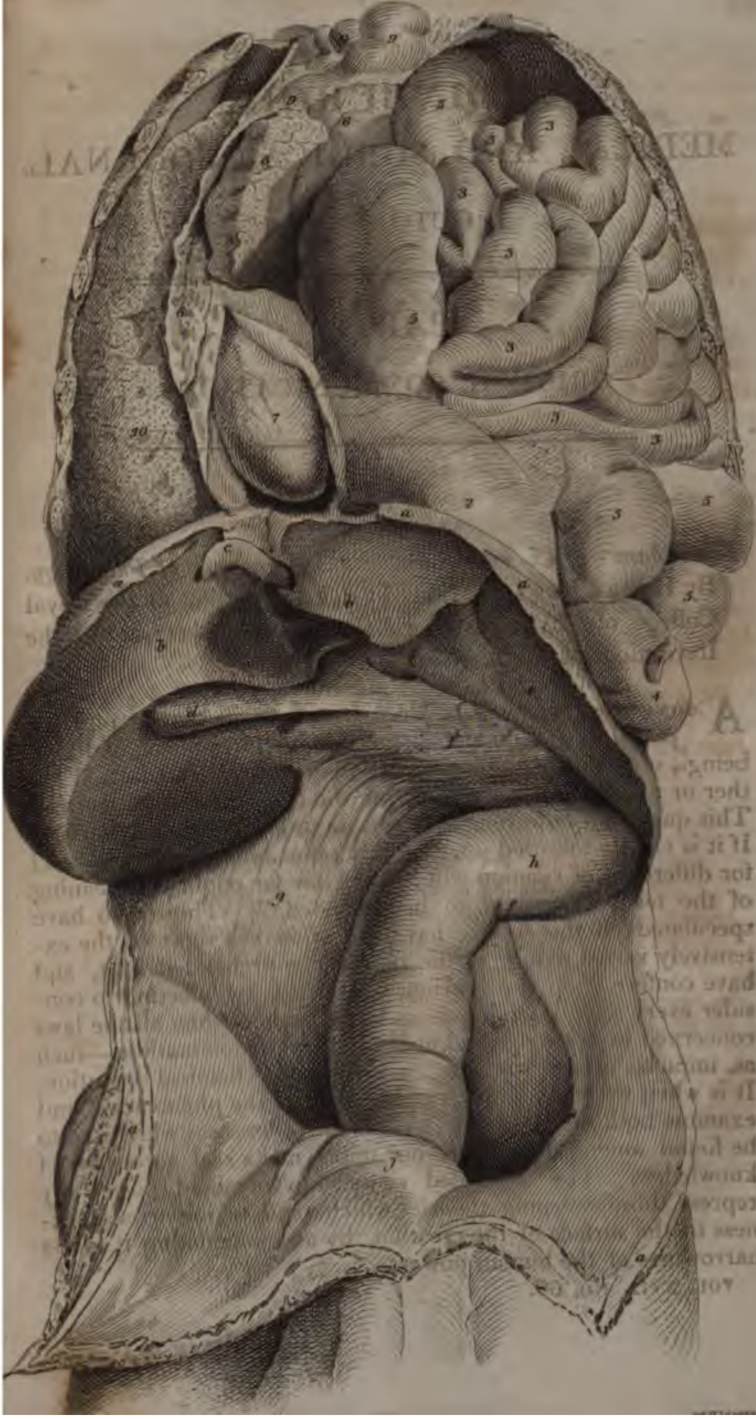
e, The diaphragm.—The preternatural opening, through which the stomach and colon are passing, is immediately beneath the letter of reference.

f, The cardiac portion of the stomach, where it is passing through the aperture of the diaphragm. It is here seen covered by the loose peritoneum coming from the dorsal surface of the abdomen. *g*.

UNIVERSITY OF MICHIG

Dr CAMPBELL'S CASE.

Edinr Med: Surg. Journ No 60 P. 516.



Sculpt

h, The termination of the colon, about to pass through the aperture of the diaphragm.
j, The urinary bladder covered with the peritoneum.

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1. 1. 1. 1. Parieties of the thorax.
2. The stomach in the left thoracic cavity.
3. 3. 3. 3. 3. 3. 3. The small intestines.
4. 4. The caput coecum coli, with the appendix vermiformis.
5. 5. 5. 5. 5. Different portions of the colon.
6. The mediastinum, of a semicircular shape.
7. The heart.
8. The left lung—the figures are placed on the surface which had been inflated—the rest appears consolidated, and resembles glandular structure.
9. 9. 9. The thymus gland.
10. The right lung, sound and elastic, but limited in its expanse by the diminution of its cavity, from the pressure of the abdominal viscera in the left cavity.

V.

Account of the Epidemic Cholera, as it occurred at Mauritius. Communicated to Dr MacDonnel, Belfast. By C. TELFAIR, Esq.

MY DEAR DOCTOR,

THE report of a contagious disease prevailing in this island will have excited in your mind some solicitude for our safety, and you will naturally expect from me some account of its appearance originally among us;—its leading features—prevailing symptoms—distinctive characteristics—modes of treatment—and result. Although I have but little leisure at present for such a task, and shall probably omit many instructive circumstances; yet I am unwilling that what I have seen should lose its freshness and precision in my mind, by waiting for an idler moment. On the 16th November last, at Port-Louis, the faculty were first astonished by the sudden appearance of this new disease. The patients consisted of the black population chiefly, and of the Mosambique caste. These are the curly-headed woolly negroes,—low in the scale of civilization,—too unintelligent to learn trades, and generally used as porters for heavy burthens, or such work as require mere animal force. They are an uninterprising quiet race, not given to excess, living chiefly on rice and Indian corn. When struck with the disease, they were generally at their common avocations; and, without any previous notice, fell at once to the ground, as if by an electric shock. In this state, they were lifted by their comrades and carried to their masters, or the nearest medical man. In a few minutes, the whole of the body, head and limbs, was covered with a cold sweat, falling off in great drops; the prostration of strength very remarkable; the strongest man having no more force, either of speech or muscular movement, than is observed in a fainting fit, when animation begins to return; the voice hardly audible; the skin, when touched, has the feel of wet marble. With this, there is a sensation of internal unquenchable heat; an incessant thirst; the tongue soon gets a parboiled appearance, and becomes cold from the first. There is a violent inclination to vomit, and to go to stool; the dejections resemble generally clear water, mixed at first with undigested aliment. In a few minutes, in some cases from the very first, no pulse is felt at the wrist; the fingers and toes, and arms and legs, become shrunk in a most extraordinary manner; so that, from being plump and round, they appear as if not only the blood had been drawn out of them, but as if the muscular substance had also disappeared. The nose also becomes cold and pointed;—and in the course of an hour, a stout man has all the appearance of having kept his bed, in a constant state of exhaustion, for six months. The eyes shrink into their sockets as if their fat cushion was absorbed. On looking at the profile of the patient, you see in most cases merely the circle of the orbit, the prominence of the eye having entirely disappeared. There is also a severe pain at the angle of the jaw in each side, and under the ears;—a partial deafness takes place. But the worst torments consist in the spasms which come on without delay, beginning in the cold feet and legs—running up the abdomen—twisting the patient in the greatest agony in every imaginable contortion—and returning every five or six minutes, accompanied with retching and tenesmus of the most violent kind, until death. The change of the countenance is very striking;—a father would not know his son to be the same person after two or three hours of the disease. Among the white persons who have fallen, this change is still more remarkable, as the yellow and livid colours commence very early, to banish the natural white and red. These changes begin in the extremities; and many of those who have died had the first presentiment of the fate that awaited them, from being struck with the extraordinary appearance in their hands and feet,—the shrivelled, shrunk appearance of the skin of the fingers and toes,—bloodless and fleshless,—and looking as if they had been sodden in water for days. The arms and legs become stiff, and with intense pain below the knees and at the wrists. The livid deadly colour follows these symptoms, and advances till the whole body and every feature are equally discoloured. The abdomen becomes distended like a drum—all dejections cease—the clysters which are thrown up are retained—the medicines which are swallowed and the liquids are not vomited, notwithstanding all the convulsive efforts of the patient. The natural heat never returns. From the first moment, every portion of the skin has the feel of a cold, wet, marble slab. Bottles of warm water—the vapour bath and warm bath—appear to have no more effect in exciting heat, than they would upon so much dead animal matter. Yet, with all this extreme cold, the patient cannot bear the weight of bed-clothes—complains of heat—is much annoyed at the frictions by which it is attempted to restore the circulation. The cold and viscid exudation from the skin continues to flow faster than it is rubbed off; and I am persuaded that, were the patients by any accident to be weighed before the disease, and again after its attack has endured for a few hours, the loss of substance would be found very remarkable, from that cause *alone*, of extraordinary cutaneous discharge. The duration of the disease, when fatal, varies from two or three hours to twenty-four or thirty—but generally it is under twelve hours; and the patient seems to have a presentiment, which is generally correct, of the period which is to terminate his sufferings, and predict the hour they are to die. Very few have any hope the moment they are seized; even the strongest minds are completely overthrown; and there seems a carelessness, and even aversion, to the employment of remedies. Such is a sketch of the symptoms generally, from which there has been little variation.

The introduction of this disease has been attributed to a frigate which arrived here from Ceylon a few weeks before the disease appeared at Port-Louis. It was known that the disease had existed at Ceylon, as well as all over the Indian peninsula, and had been at least as fatal as it has proved here. Look at the map of Mauritius, and I shall mark the progress which the disease took during its stay on the island. In the first ten days, it carried off about fifty persons a day at Port Louis, out of a population of eight thousand persons. The alarm becoming general, business ceased;—the shops were shut, and the inhabitants fled to the country;—the disease followed them. It spread from the Port to the district of Pamplemouses—thence to the district of Floeg, at the interval of a few days—from thence to Mohebany or Grand Port, and successively to the Savannah, keeping chiefly along the coasts of the island; so that it did not reach our estate of Belembre until Monday, 24th January 1820. I had flattered myself that we should have been altogether exempt from its visitation, from the nature of the measures which I took, and the apparent success of my prophylactic plan: and though we have not been altogether so fortunate as I had hoped, yet the comparative smallness of our loss has been so striking, as to justify my communicating my precautions to you, and exhibiting the result.

It appeared to me, that the disease was peculiarly one of the nature of the Iliac passion; but of greater violence than usually occurs, and, therefore, depending very much upon the state of the abdominal viscera. The classes of people who were most liable to its atacks, were those much troubled with visceral complaints, indigestions, worms, and all those disorders which arise from a food consisting of much vegetable aliment, without much condiment, and insufficiently prepared for digestion by the processes of cookery. The consequence is, that the stomach and bowels are generally distended with undigested matter—worms are generated in great quantities—diarrhœas occur from time to time—and marasmus is not unfrequent among persons thus fed. Under these circumstances, a violent inflammatory attack of the viscera is generally irresistible;—there is great difficulty in overcoming the causes of inflammation;—the patients will hardly bear the lancet—or great evacuations. It was to these causes, or similar ones generally, that I attributed the great mortality that attended the disease. I myself had adopted a plan of feeding our people, which tended to prevent diseases of the stomach and intestines. The food was more carefully prepared. A large quantity of nourishing soup, containing a considerable proportion of animal aliment, was always at the disposition of every person on the estate to eat as much of as he liked. By frequent examinations of the people, I had overcome the prevalent tendency to worms, not only by the means abovementioned of strengthening the stomach, but by frequent administration of small doses of calomel at night, succeeded by castor oil in the morning, in all clearly marked cases. Our estate was, from these causes, more healthy than it had been for years. At the time the disease appeared at Port-Louis, when it began to spread and gain ground, I deemed it proper to take still farther precautions,—to keep the bowels soluble,—

and administered to each person on the estate, every Sunday morning, from one to two grains of calomel on an average, and half a pint of salt water at the seaside; and, on Thursday morning, the same quantity of salt water without the calomel. This may remind you of Dr Last's prescription of "julapping the eastward and bleeding the west," in Foote's farces. But when you have to dose a population exceeding five hundred persons, it is not inconvenient to reside at the side of the ocean, and to draw from that grand reservoir. Whatever effect may be attributed to this cause, it is certain that the people remained healthy on this plantation, whilst all around us were suffering under the disease—even our nearest neighbours on each side of us: And so struck were the inhabitants generally with our exemption, that many followed our example, so far as the evacuating plan went, and conceived that the best consequences resulted. But my own opinion is, that the previous system of superior nourishment is of indispensable importance also to a fair trial.

At last, the disease reached Belembre.—Its first victim was a negress of the Mosambique caste, aged 54 years. This woman was at her ordinary work, weeding some Indian corn near the house, when she was observed by the surgeon of the Establishment leaning against a rock, and making efforts to vomit. He examined her pulse, and found it small and confined. In this case, the duration of the disease was eleven hours. She was seized at five in the evening, and died about five next morning. She had made no previous complaint; and when questioned, said she had been sensible of no incommodity, but that of a slight looseness during the forenoon.

On the following day, the 25th, another Mosambique negress, of the same age, complained, at ten o'clock in the forenoon, of looseness, colic pains, and sudden prostration of strength;—her pulse much confined, or, as the French say, "*gené.*" Towards noon, the symptoms were aggravated. She took small doses of neutral salts every hour; larger quantities of rice water and other mucilaginous drinks; emollient clysters frequently; warm bath, and frequent warm embrocations of the abdomen. Towards evening, the coldness became universal. Her pulse vanished from the extremities; and, in the beginning of the night, she expired.

After the death of this negress, there was an interval of several days before any fresh case happened on this estate; but, on Tuesday the first of February, a Madagascar negress, aged about 45 years, complained of colic pains and looseness. She stated that she had been thrice at stool during the night; but had slept well in the intervals. Her pulse was, however, loaded; and there was an apparent alteration in her features. A neighbouring surgeon, Mr Hodoyer, called in to visit her, with the medical man of the estate, stated, that it was the reigning disease under which the patient laboured; gave ipecacuanha, which vomited copiously; and continued doses of neutral salts, two drachms every two hours; with abundance of mucilaginous drinks and clysters. All these means were ineffectual. The alvine dejections were constantly watery, mixed with a gray mucus and undigested aliment. The pulse disappeared during the day; and at night she expired.

Next day, the 2d February, at five o'clock in the morning, a strong and robust Mosambique black, of 40 years of age, complained of colic pains and diarrhœa. His dejections were of the same nature as those of the others. He complained most of a dull pain in the lower part of the abdomen, and chiefly at the left flank, with a feeling like a ball, which forced its way upwards, causing a fluttering of the heart—the skin cold—pulse small—and hardly perceptible at the wrist at long intervals. He was treated with hot baths, and evacuants and frictions, as the former cases,—and with the same result. His nose and extremities had become thin and crisped; but his body was full, muscular, and fat. An hour before his death, the general coldness had given way to a great accession of heat—like the hot fit of a burning fever. He was then in the hot bath, and, by his exertions, got out from the hands of four blacks, who attempted to keep him in it.

The same day, at noon, another black of the Creole caste, complained of similar symptoms; his age about 35 years. Seeing how ineffectual the plan hitherto pursued had been, we began by taking six ounces of blood from this man, although it was obtained with difficulty, from the smallness of the pulse. Administered thirty grains of ipecacuanha in powders—gave frequent clysters of mucilaginous liquids—warm bath—and, after the operation of the emetic, small and frequent doses of rhubarb. The symptoms became very early of intense violence, —a most profuse cold colliquative sweat—pulse very feeble—severe pains about the pericardium, and in all the articulations of the bones of the limbs and body. His face looked as if frozen —his eyes shrunk back in the sockets—his fingers crisped and bloodless—his sufferings were extreme; and he gave over all hopes from the first moment. It was needless to attempt any farther remedies with this man; yet saline medicines were continued, which he swallowed; but they produced no effect;—nothing was vomited, and his purging stopped. His stools at first were watery and white, with flocculent mucosities much subdivided, and appeared as if flour had been thrown into them in small quantities. Bottles full of warm water were wrapped in flannel, and placed all round his body and limbs to excite warmth,—but in vain. As this man had the appearance of being very athletic, full of blood and strong, being our chief blacksmith; and as five hours had not elapsed since his first seizure, it was deemed proper to bleed him again, notwithstanding the extreme prostration of strength, if he were to die under the operation. It was thought that it would, at all events, lessen his torments and agony, which appeared extreme. He was therefore put in a hot bath, and his pulse thus returning in the arms, the surgeon took ten ounces more blood from him. His convulsions and writhings were incessant; his enemata were not returned; all that he swallowed remained in his stomach. He called for cold water, and drank much. His breathing was with that kind of whistling noise which is made when a person feels extreme heat;—he died in less than six hours from his first attack. The rapidity of the fatal termination in this case decided me, notwithstanding the prejudices against dissection, to examine the body after death. I had previously made diligent inquiry, among all the medical men of my acquaintance, as to the result of their observations in the dissections they had made in this disease since its appearance amongst us; but was invariably told that there had been no appearance, either in the viscera or brain, that could at all explain the extreme violence of the symptoms. The surgeon opened the body before me. There was nothing remarkable in the thoracic cavity; the liver, also, was apparently sound and unaffected; the gall-bladder, with a proportion of bile, apparently of a healthy quality. The stomach appeared much distended, and of a darker hue than is usually found; and its blood-vessels appeared large and dark. We opened it, and found its contents to consist chiefly of what the patient had last drank, mixed with a great abundance of filamentary mucosity, and with a greasy appearance. The whole interior coat was highly inflamed, and so dark as to leave no appearance of its natural colour;—it was like a raw, bloody surface, and the vessels appeared as overdistended by a forced injection. The pylorus was, on the outside, like a hard tumified gland, much increased in bulk; and within was so narrow in the passage as to admit with difficulty, and after several attempts, a passage for the little finger. The duodenum participated, but in much inferior degree, this turgescence and inflammation. These appearances were enough, in my opinion, to satisfy our judgment as to the cause of death. However, wishing to leave nothing unexamined, we proceeded to trace the whole course of the intestines, and found, without expecting it, one intus-susception near the middle of the ilium, and another near its inferior extremity. These volvuli, or invaginations, appeared very recent; the portions of intestines comprised in them were not apparently inflamed; a slight pull with the hands disengaged them, although the part taken in was four inches in the one case, and about five in the other. There was no collection of feces or fluid either above or below the point of intus-susception, nor any remarkable trace of irritation; and I attributed these volvuli rather to the effects of the agonizing spasms, to which the patients had yielded, than considered them as causes of his sufferings. There were no other variations, from the appearances of nature, observable in this dissection. There was much fat in the omentum; although that of the limbs and the orbits of the eyes seemed to have been absorbed.

It appeared to me that this case demonstrated decidedly, that notwithstanding the extreme prostration of strength, and every symptom denoting a diminution in vascular energy, yet that the disease itself was nothing else than a most violent inflammation; and that the sole hope of subduing it must be sought for in the withdrawing the pabulum of inflammation from the system, and at the same time exciting, in the extremities and on the surface, an increased action by all means in our power. This latter part had already been attempted with little success by means of frictions, baths, heated bottles and stones; and there appeared an absence of that vis vitæ necessary to be excited into action by blisters and sinapisms. The patient generally dies in a cold fit, before a hot paroxysm has time to succeed; yet, in one of the cases I have cited, there was the hot fit established an hour before the fatal termination; and in the last case, it is seen that the inflammation is at its extreme violence in the cold fit. It appears as if the great mass of blood deserted from the extremities, and, pouring upon the centre, produces extraordinary action and heat internally, whilst the surface is cold and flabby, and bloodless and insensible.

The next case which I shall mention had a favourable termination. The black was of the Indian caste. He had the usual symptoms; but the skin was not covered with the cold colliquative sweat. His dejections were watery—pulse hardly perceptible. Eight ounces of blood were immediately taken, though with difficulty; ipecacuanha, and afterwards rhubarb, given without effect; diluting drinks and mucilaginous clysters every quarter of an hour; hot bath. At length, vomiting came on; when it ceased, castor oil was administered. The pulse had entirely ceased at the wrist. Hot bath repeated, at as high a temperature as could be borne. About nine hours from the moment of seizure, the stools began to appear mixed with feces; the patient became more calm. It was now night, and he had some minutes of sleep from time to time;—his pulse began to return, though feebly. The next morning, a dose of natron vitriolatum, much diluted in rice water, was given; diluting drinks and clysters continued. The sufferings became less constant and troublesome. The heat returned to the surface. The third day, he was without pain; no diarrhoea; great weakness. Purgative drinks of salts and manna were given; his appetite returned; he was carefully nourished; had claret and water for drink; and, in a few days, was able to go about light work.

In our population of nearly six hundred people on this estate, I lost seventeen by this disease, which was considered as a very small proportion; many habitations, having lost 10 or 15 per cent. of their people, and some even more, reduced in a few days, by this misfortune, from opulence to poverty. I opened every subject after finding the intus-susception, and to my surprise found, in all but one, the same appearance. Every case had one or two invaginations of the ilium, and one child had four. It appeared extraordinary that the same appearance was not observed by the medical men of the island, which I attribute to a less curious examination on their part than I myself made. In the general and superficial look at the intestines, which is generally considered sufficient in such dissections, there was nothing to excite inquiry; and the minute search which I happened to make, on the first dissection, leading unexpectedly to the discovery of these volvuli, I continued a similar search in the other cases, and found similar results, without being at all prepared to meet them. Whether you may consider them as causes or effects of the sufferings of the patients, I know not; but I am inclined to regard them in the latter light; because in general I found, that the parts of the intestinal canal actually invaginated were without those strong marks of inflammation approaching strangulation, which it would require to produce the tormina vehementia, cruciatusque intolerabiles of the disease, whilst the region of the stomach exhibits the inflammatory state. The epigastric region is perhaps the strongest central source of sensibility. A blow upon it kills, without any apparent organic lesion; it was the finishing stroke, formerly, of death upon the wheel; "the coup de grace." The extensive webwork of nerves which forms the solar flexus, and which is distributed over the epigastric viscera, may in some way account for the strongly associated sensibility by which the mind and body are so intimately operative on one another at that point. If we are under the influence of agreeable feelings or passions, the most pleasing and powerful part of the sensation is referred to that point. In grief, also, the oppression is most felt there. Surprise or terror tightens our breathing, as if a cord were drawn round the epigastrium. The disease we are describing seems to attack also this prime seat of feeling; and this may serve to reconcile the apparent anomaly of several of the symptoms. The malady appears to be essentially fixed in the epigastric region; and the spasms, intus-susceptions, cold sweats and torments, are the accompanying symptoms.

Mauritius, 28th January, 1820.

I had written so far, my dear Doctor, when I became alarmed at the length of my letter, more particularly as I had not said more than half of what I intended; and on that account had laid it by, intending to forward it to you at some future opportunity, with such other light as my intercourse with the medical practitioners of the island might enable me to collect. I have since, however, been so occupied on subjects more urgent, that I have not had time to think upon the subject, and therefore send you this. I subjoin the only papers which have been printed upon it here. You will observe, that the subject of its contagious nature has given rise to some acrimonious feeling, and strong measures. My own opinion is, that it is contagious, and was introduced here by the frigate Topaze, from Ceylon; but parties run so high, that I keep my opinion to myself here. Some calculate the loss occasioned by the disease, during its stay of three months with us, at ten thousand, which is the tenth of our population; others, so low as four thousand: it is not easily ascertained, from local and peculiar reasons, as connected with this subject. I subjoin an extract which I accidentally fell upon. It is from Olaus Borrichius. "Relatum mihi nuper a medico e Jamaica reverso, iliacam passionem malum illic endemicam, crudeliter regnare. Seque in aliquot subjectis quos ista lues confecerat, a morte cultro observasse, intestina in se invicem spiræ modo contractu arctiori, cæterum duplicata in se involui, haud alitur ac gladius vaginæ inseritur aut vitrum angustius capaciori solet includi."

Mauritius, May 1st, 1820.

VI.

Case of the Epidemic Indian Cholera treated successfully. By Dr WILLIAM LLOYD, Graduate of the University of Edinburgh, Member of the Royal College of Surgeons, London, and Assistant Surgeon to his Majesty's Forces, &c. &c. &c.

AT Vepery, Madras, previous to leaving that settlement, the 18th May, 1819, I was requested, by a Captain of his Majesty's 34th regiment, to accompany him for the purpose of seeing Lieutenant Green of the same corps, who was at that moment attacked with violent spasms in the stomach.

On approaching his house, excessive reiterated screams were distinctly heard, which impressed me with an immediate suspicion he was suffering from spasmodic cholera. Entering his apartment, I found him labouring under this deplorable disease. From the report of the case, which with some difficulty I obtained from himself, in consequence of extreme mental agitation, he had been, for some days previous to the approach of the attack, indulging freely in the use of malt liquor (a potation much in use amongst British officers in India), and did not attend in a proper manner to the state of his alvine discharges, (occasionally) subject to irregularities in the primæ viæ; and a few minutes before the disease commenced, he had several excrementitious evacuations of a most offensive description, mixed with morbid bile and mucus.

In a complaint so alarming and destructive in its consequences as this epidemic was throughout this settlement, at a moment when such controversy of opinion prevailed respecting its treatment, it was difficult to say what practice was most likely to prove successful in this case. However, as I have always conceived the disease may uniformly be attributed to an obstruction of the free circulation of blood through the pulmonary vessels, and particularly the heart and its immediate branches, I was induced to try in this, as well as other cases, venesection. In Ceylon, as likewise in other parts of India, where this practice was adopted (whenever it was possible to detract blood), it was followed with considerable advantage.

The officer alluded to in the preceding statement was plethoric and muscular. The symptoms of his case were as follows. He was suddenly seized with excessive spasmodic action of the stomach and abdominal muscles; considerable nausea, and inclination to vomit; the spasms recurring at short intervals, the relaxation from pain being of a short duration, not exceeding three minutes. He complained of a sense of heat and pain in the epigastrium, and was frequently striking this part with his hands. He was affected with deafness, and some degree of thirst. His respiration became suddenly oppressed, and was performed in an interrupted manner, accompanied by a peculiar noise; tongue white, but moist. The countenance soon changed, indicating much suffering; heat of the surface of the body much below the natural standard, and moist; pulse feeble, and extremely irregular. A few minutes after my first seeing him, he complained of a sense of coldness in the feet; and the circulation evidently commenced forsaking his lower extremities. The spasms now began to affect the feet and legs, particularly the muscles of the left limb, which were firmly contracted, hard and painful. This effect was also to be observed in the abdominal muscles, which were tense and rigid. The foregoing is a general statement of the case, and the following the result of my practice.—On first seeing him, my attention was at once directed towards averting the violence of the spasms.—12 o'clock, midnight.

Capiat haustam sequentem *quamprimum.*
℞ Tincturæ opii guttas cxx.
Ætheris sulphurici *drachmas duas.*
Aquæ fontanæ *drachmas sex.* M.

A wine-glassful of brandy to be given (with an equal portion of water) every ten minutes. Half an hour after, the spasms of the stomach and extremities increased. Flannels, wrung out of hot water in quick succession, were kept constantly applied to the abdomen. The draught of tinctura opii was increased to the quantity of *one hundred and fifty* drops without *æther*, mixed in four ounces of brandy, and given *twenty minutes* after the first draught. A quarter of an hour after this was taken, the spasmodic symptoms increased, and the pulse became more feeble and intermittent. I took *forty-five* ounces of blood from the right arm; and soon after he became considerably relieved, the spasms diminishing in violence, the intervals between *each* gradually lengthening. *Two* hours from the commencement of the attack, all convulsive action ceased. The pulse had risen, and became regular and small; he very soon after fell into a soporific state, which continued three days. The day following, I commenced purging him freely with brisk cathartics. First ordered

℞ Hydrargyri submuriatis gr. xxv.
Pulveris radicis Jalapæ *scrupulos duos.* Misce.

This powder had no effect three hours after it was taken. I substituted the following.

℞ Potassæ supertartratis *semidrachmam.*
Pulveris jalapæ *scrupulos duos.*
——— Zingiberis *grana octo.* M.

This produced, shortly after it was taken, several offensive evacuations, extremely copious, and of a very dark appearance. The purgative treatment was consequently continued, and the following mixture prescribed, until the alvine evacuations assumed a healthy condition, viz.

℞ Magnesiæ sulphatis *uncias duas.*
Mannæ optimæ *unciam cum semisse.*
Infusi Sennæ simplicis *uncias duodecem.*
Tincturæ ejusdem compositæ *unciam cum semisse.*
Misce.—Fiat mistura aperiens; cujus capiat cochlearia duo majora omni hora ad purgationem usque plenam.

This medicine produced several tenacious discharges, which was constantly persevered in three days after, leaving him in a state of convalescence. Soon after, he enjoyed good health.

Isle of Wight, Newport, 24th July, 1821.

VII.

Neuralgia of the Inferior Maxillary Nerve.—"Nervus mandibulo-labialis," cured by Operation. By John Lizars, F. R. S., Fellow of the Royal College of Surgeons, and Lecturer on Anatomy and Physiology, Edinburgh.

> "Operations have come at last to represent the whole science."
> John Bell.

This case I am induced to communicate, as it resisted all the remedies employed but the knife, and as the nerve was cut where it enters the osseous canal; a point at which I do not find any author on the subject mentions the operation to have been performed. On the contrary, it is considered by some as impracticable, by others as hazardous.

Neuralgia, from the days of Hippocrates to the present time, has been frequently the subject of observation. It is a disease of such peculiarity, and so painful in its symptoms, that it could not fail to excite the attention of every one who has witnessed it. Various ingenious theories have been proposed to explain its nature, and still more numerous have been the remedies for its cure. Of all the theories which have been advanced, that of Pouteau appears the most rational, if we divest it of its humeral pathology. Bobemoreau has published the history of a case of neuralgia of the face, which assumed the intermittent type, and which this physician removed for six months by administering cinchona and opium. Pinel relates another case of a soldier who laboured long under sciatica, having recovered by joining his regiment on a campaign. Neuralgia has been found in the same constitution with hysteria and hypochondriasis. Thouret, Andry, and Heurteloup, cured patients labouring under neuralgia with magnetism. Blunt cured a lady affected with neuralgia with electricity. The infra-orbitary neuralgia presents either the remittent or intermittent type; the latter more frequently.

From these facts and observations, as well as the whole history of the disease, I am somewhat surprised that Chaussier, and several French authors of the present day, should consider neuralgia true phlegmon or phlegmasia of the nerves. Chaussier describes it as consisting of pulsations, lancinations, and tearing or dragging pains, without any other inflammatory symptom either before or after the paroxysm. He and his followers state, that there is no redness or increase of heat in the soft parts. They only allow, that sometimes the skin is affected with tumefaction, and a light colour. Such an assemblage of symptoms never can authorize the appellation of phlegmon; otherwise, we must remodel those characterizing phlegmon. Rousset, who is of the same opinion with Chaussier, and who dissected a case of sciatica in the Hotel Dieu, mentions that the envelope of the nerve was a little relaxed, and that the veins of it were varicose, but that no other appearance was manifest. Captain G——, the subject of the well marked case related by the late celebrated John Bell in his volume on Tumors, died last winter, and I had the good fortune to dissect him. Sixteen years ago I was present when Mr Bell cut the infra-orbitary nerve of the left side; but since that time, the supra-orbitary and mental nerves of the same side had also been cut. In the dissection, the supra-orbitary was first examined; the nerve both before and after the division appeared perfectly natural. The point of division was white and dense like cartilage, and formed a considerable mass of substance, somewhat in resemblance to a ganglion, such as the semilunar. The infra-orbitary presented a similar appearance: at the foramen, there was a quantity of this white dense matter; but the twigs of the nerve quite natural, were distinct beyond this point, and were evidently connected with it. Precisely the same was observed at the mental foramen. Of the reunion of a nerve there cannot be the least doubt, after the experiments of Haighton and Swan, whatever may be the opinion of Richerand. One man often can accomplish what another cannot.—"They are ill discoverers that think there is no land, when they can see nothing but sea."

Taking advantage then of all that has been written on the subject, it appears to me that neuralgia is a disease of a nerve wherein the sensibility of its extreme twigs are morbidly increased; so that, by the slightest irritation, this may become excruciatingly agonizing, and the parts supplied with the nerve be violently convulsed. "All the pains of the body," says the illustrious Darwin, "may be divided into those from excess of motion, and those from defect of motion; which distinction is of great importance in the knowledge and the cure of many diseases. For, as the pains from excess of motion either gradually subside, or are in general succeeded by inflammation; so those from defect of motion either gradually subside, or are in general succeeded by convulsion or madness." Now, it will at once appear evident, that neuralgia comes under the latter of these. That it is defect of motion in the nerve at first, is manifest from its being caused almost invariably by cold. This state of matter applied to the nerve appears to chill it for a time, then convulsive action follows; and the alternate quiescence and paroxysm are dependent on the laws of animation. Were neuralgia inflammation of the nerve, the pain would be as constant as in phrenitis, and there would be a deposition of coagulable lymph in the neurilema.

Of the various modes of treatment, the Cautery, either potential or actual, and the Knife, seem the only ones deserving notice.

The Cautery is the method adopted by the French surgeons of the present day;—they condemn the Knife. The former no doubt has been, and promises to be, generally as effectual as the latter; but in this country it has been so condemned, that the following observation of Pouteau is truly applicable. "Les médécins qui se vanterent de pouvoir lui substituer avec avantage des moyens plus doux, trouverent facilement dans la crèdule timidité des malades, des apologies qui exaltoient leur reputation, en même tems qu'elles enervoient le médécine. Je sais ce qu'il faut penser de ces sortes de declamations, celles sont toujours quelque chose d'outré." Thus, when practitioners in this country, from ignorance or petulance, address language to their patients similar to that alluded to by Pouteau, is it to be wondered at that so strong a prejudice should exist against it!

Whoever will take the trouble to read the history of the cautery, will not hesitate to apply it whenever it appears requisite. Prosper Alpinus thus eulogizes Egypt for the employment of the cautery.—"Hoc igitur est illorum propositum auxilium, quod multis aliis utilitate in morbis antiquis præferunt, de ipsoque illi populi non parum jactantur." And Pouteau observes, "Les modernes ont eu le plus grand tort, d'avoir abandonné et même condamné des moyens de guérir, auxquels ils n'ont supplée par aucun autre de pareille efficacité."

The cautery seems to act primarily and almost solely on the extremes of the nerve affected, which, being the most sensitive and the most involved in the disease, will be paralyzed or destroyed for a time. Thus their increased sensibility will be subdued. "L'action du feu sur les nerfs, dit M. Pouteau, est d'abord celle d'un agent qui est l'ame de toute la nature." The moxa and red-hot iron are preferable to any of the caustic preparations.

The Knife, which is the fashion of this country, and which, in the hands of the blood-thirsty, has threatened again and again to degrade our profession, must act by cutting off the source of the diseased nerve for a time; and hence the increased sensibility will be subdued. It has frequently failed in this, as in many other diseases, to accomplish a cure.

Mercury has been used in two or three instances of neuralgia of the face with success; but these are not numerous enough to decide its efficacy. Again, it has been known to give rise to sciatica. "L'action du mercure, dit M. Richerand, principalement celle du muriate mercuriel oxigéné, y a quelquefois donné lieu." Where it was administered in the affections of the face, it aggravated the pain until pushed to excite violent ptyalism; it must consequently act by overpowering the sensibility of the nerve, partly by exhaustion, and partly by the tumefaction of the face.

Neuralgia of the face is liable to be confounded with toothach, hemicrania, rheumatism, abscess of the maxillary antrum, muscular cramps; and, we may add, the pressure of too many teeth in either of the maxillary bones. A very interesting case of this nature occurred to me last year, of a lady who was tormented with pains resembling those of tic douloureux, and which were removed by extracting one wisdom tooth after another. The teeth had so little room that, in their descent, the crowns were turned towards the cheeks. Similar cases, I understand, occur occasionally to the dentists. Pujol thus characterizes the symptoms of neuralgia, which appear clear enough to distinguish it from other diseases. "Les douleurs sont me-

mentanées et extrement aiguës, qui se font sentir de temps en temps comme des coups electriques dans certains lieux determinés de la face, qui de là rayonnent en différens sens, et font éprouver la sensation d'un instrument tranchant plongé dans les parties molles."

I have made these preliminary observations, in consequence of finding the disease little known, and often misunderstood. A gentleman in this neighbourhood consulted me, about three years ago, for neuralgia of the mental nerve; when, to my surprise, on examining his mouth, not a single tooth had been left. He appeared, in place of a man in the meridian of life, one between sixty and seventy. The division of the nerve, at its exit from the mental foramen, gave immediate relief.

The patient whose case I am about to detail, is a labourer within 10 miles of this place, 55 years of age, and of a sound constitution. He was attacked with this complaint some time in July 1819; and his medical attendant, imagining the affection toothach, extracted the third and fourth molar teeth of the lower jaw on the right side, the place where the pain was acutely felt. This, however, procured no relief. Various remedies were then employed, such as narcotics, purgatives, blisters, and local bleedings; but all to no purpose. The disease daily increased, both in severity and duration; and, after five months painful struggles, he applied at the Hospital, where he was put under the care of a physician of no inconsiderable talents, who administered narcotics both internally and externally to a great extent, to try their efficacy, before resorting to more powerful means. After six weeks ineffectual trial, the man, worn out with his sufferings, and despairing of ever obtaining relief, requested his dismissal, which was accordingly granted. He then, by chance, happened to meet a patient on whom I had operated for hernia, who sent him to me.

When he called on me, towards the end of December 1819, he was incapable of describing his sufferings, from the dread of bringing on a paroxysm; for whenever he spoke, eat, or moved any of the muscles of the right side of the face, instantly an attack came on. He referred me to his daughter, who accompanied him. She then told me the preceding short history of her father's complaint, and mentioned that the pain began near to the second molar tooth of the inferior maxillary bone on the right side, darting from thence to the ear and to the eye and the temple of the same side, accompanied with a violent convulsive action of the muscles of the face, with redness of the skin, and a flow of tears. He had not been long in the room when a paroxysm attacked him, and I witnessed a painful exhibition of these symptoms; he clapped his hands to the sides of his head, as pressure always soothed his sufferings, and continued writhing in agony for a few minutes. None but an eye-witness can conceive the *tortures* in this malady. Their effects are faithfully pictured by a French author as follows.—"Le malade qui est frappé d'une nevralgie maxillaire, redoute de prendre quelques alimens; la douleur est si vive que les malades se soumettent sans frémir aux operations les plus douloureuses: ils réclament aux mêmes les vesicatoires, les moxas brûlans, la cauterization la plus cruelle: dans l'espoir de trouver un terme a leur maux, ils desirent avec ardeur le secours si generalement redouté, du bistouri. On a vu plusieurs malades mis au desespoir par une nevralgie maxillaire, ne pas hesiter a se faire arracher successivement toutes les dents, à subir le contact repété du cautère rougi à blanc, braver les plus vives douleurs, et mepriser les cicatrises les plus hideuses; d'autres après avoir tenté sans succès une multitude de traitemens divers, n'esperont plus dans la puissance de l'art, ni dans celle de la nature, ont mis fin volontairement à une existence qui était devenue pour eux le plus horrible des supplices." The paroxysms recurred every half hour, both in the day and during the night. When I proposed to him the moxa or the knife, he entreated for the latter, as it would sooner decide the chance of relief. Accordingly, next day, in presence of Mr Allan, surgeon to the Infirmary, and Dr Grant, house-surgeon to the same establishment, and several of Mr Allan's and my own pupils, I divided the nerve as it emerges from the mental foramen of the inferior maxillary bone, by cutting the lining membrane of the mouth from the gums, precisely below the second molar tooth, an invariable guide to the situation of the foramen.*

The nerve, as it runs up to expand on the cheek, (for in this instance it had not yet branched into its twigs), being quite evident, I cut away a portion about the fourth of an inch. When the nerve was cut, he gave a leap, a sure criterion that it was divided. From the moment of division, he was no longer molested with pain. The wound healed in a day or two, and he returned to the country, where he resumed his occupation as a labourer, and enjoyed excellent health, until one morning in December last he was suddenly awaked with the same torturing pains.

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[*] A straight line, drawn from the second molar tooth of the inferior maxilla to the base of the bone, will always indicate the mental foramen: and a straight line, drawn from the second molar tooth of the superior maxilla to the margin of the orbit, will invariably bisect the infra-orbitary foramen.

Thus he had been freed from the disease for the space of twelve months.

After enduring these excruciating tortures day and night for five weeks, and hourly becoming worse, the paroxysms recurring at shorter intervals, he came to town, and called on me on the 3d February last. The symptoms were nearly the same as formerly. They returned at shorter intervals, scarcely five minutes intervening between the paroxysms. When I again proposed the cautery, he instantly entreated me to cut the nerve, for he had no faith in any thing but the knife; and, as the last operation was so trifling, compared with the pain he then and now endured, I appointed the next day,

4th February—When, in presence of Dr Duncan junior, Professor of Materia Medica, Mr Allan, surgeon to the Infirmary, Dr Campbell, lecturer on Midwifery, Dr Milligan and Dr Moore, I made an incision inside of the mouth, in a line with the inferior maxillary bone, precisely beneath the second molar tooth, separating the lining membrane of the mouth from the gums. My intention was to lay bare the nerve, and remove a piece as formerly; but in this I was disappointed by the old cicatrix, which by its thickening had obscured the nerve, where I presumed it had formed a junction. The mental foramen could be distinctly felt; and the application of the finger or knife excited severe twitchings. I therefore cut across the nervous matter, which relieved him, and quieted the convulsive actions of the muscles. To endeavour to prevent a reunion of the nerve, I inserted a small piece of dry sponge into the wound, to excite suppuration and gradual granulation.

5th.—Had passed a better night than for the last ten days, but felt uneasy from the sponge. The wound was ulcerating and pouring out matter; I therefore removed the sponge, and inserted a small piece of lint.

6th.—The pain had been equally severe all night as before the operation. I therefore prevailed on him to allow the actual cautery to be applied to the wound; and I endeavoured to sear the nerve at the foramen, as well as the cut twigs. The next day, as he had felt no relief from the cautery, I scarified all round the foramen, and again cauterized. I dreaded exfoliation of the bone; which, however, I find was intentionally done by André in one case, with perfect success. He passed a much better night compared with the preceding, and accordingly next day I repeated the cautery to the same extent. In this way of applying the cautery, which always mitigated his sufferings, I continued till

The 18th, when at the suggestion of Dr Duncan and Mr

Allan, who always met me in consultation, and to whom I consider myself under many obligations for their valuable advice, I cut the inferior twig of the facial nerve, which communicates with the mental. I made a small perpendicular incision a little before and parallel to the ramus of the inferior maxillary bone, where the nerve emerges out of the parotid gland over the masseter muscle. I then divided the nerve, and removed a piece about the fourth of an inch.

This operation so far lessened his sufferings, that he experienced a better night than since the last return of the complaint; and the following day was passed with intervals of two hours free of a paroxysm. In two days after, however, the pains returned as severe as ever. It was therefore deemed advisable to extract the second molar tooth, the point where the pain commenced, and cauterize down to the canal of the nerve. This was accordingly done; but no relief was experienced, excepting for a short while after the application of the cautery. The same was repeated for three days successively, but all to no purpose. He continued as much tortured as ever. It was truly heart-rending to witness his sufferings.

On the 25th, I proposed to the gentlemen who had met me before in consultation, to cut first the inferior maxillary nerve as it enters the osseous canal, then the facial at its exit from the stylo-mastoid foramen, and, thirdly, the infra-orbitary, independent of what is urged against the two first operations by Dr Haighton and Mr Swan, rather than suffer this poor wretch to endure such misery.

On examining the mouth, great pain was given by touching the coronoid process of the lower jaw bone, as well as the gum all along the right side.

The next day, the 26th, I tried to divide the nerve, by introducing from the inside of the mouth a sharp-pointed curved bistoury along the inside of the coronoid process of the inferior maxillary bone, between it and the pterygoideus internus muscle to the foramen; then lateralizing the instrument outward, and cutting towards me, with the expectation of hooking the nerve. In this I experienced considerable difficulty, from the superior maxilla shutting up, as it were, the space. He felt at one time excessive pain, indicating the division of the nerve. He was easier during the afternoon, but passed nearly as bad a night as formerly. The following day,

The 27th, the pain was confined to the seat of the extracted tooth; this, therefore, was cauterized. As the operation of yesterday had caused considerable tumefaction, so as to prevent any examination of the wound, we put him on a course of carbonate of iron, which he took to the extent of two ounces daily. This he continued to the

4th of March, without receiving the least benefit. To-day I prevailed on him to allow the application of the moxa, which was accordingly done; but he could scarcely suffer it.

15th March.—He was relieved a little during the afternoon of the day the moxa was applied; but the following day his sufferings were as severe as ever. The tumefaction of the muscles in the neighbourhood of the wound last inflicted, having now subsided, and the sore formed by the moxa healed, I again attempted to divide the nerve as it enters the foramen; but in place of the bistoury, I made first a perpendicular incision with a scalpel close to the coronoid process, and then introduced a round shaped gum lancet between the process and the internal pterygoid muscle, and scarified the bone at the foramen. When the lancet reached the seat of the nerve, the pain he experienced was intolerable; and it was with difficulty he could sit till I cut the nerve completely. From this moment there was a sudden and satisfactory termination to all his sufferings, similar to what had occurred after the first operation in December 1819; and from this time he has continued well. The other day I saw him toiling in the field with apparently great enjoyment of life.

6, *George-Street*, 25*th August* 1821.

VIII.

Cases of Erysipelas successfully treated, chiefly by Venesection.

By Andrew Duncan, Junior, M. D. Professor of Materia Medica in the University of Edinburgh.

The following series of cases, which occurred in the Clinical Wards of the Royal Infirmary during the present summer, appears to me to possess a degree of interest sufficient to justify their early publication. It seems calculated to remove a prejudice, very generally entertained by the profession, respecting the medical treatment of the Rose. After the abundant experience we have lately had of the safety and advantage of venesection in many diseases in which it was formerly prohibited, especially in continued fever arising from contagion, in smallpox with typhoid fever, and scarlatina with malignant sore throat, the extension of the same powerful remedy to another febrile disease, with cutaneous inflammation, seemed to be naturally suggested. Yet, so far as I know, it has not been brought so fully to the test of experiment as in the series of cases in which I employed it.

During the spring and summer, erysipelas has occurred frequently, both in private practice and in the Hospital, not altogether without the suspicion of its being propagated by contagion; and I readily seized the opportunity thus presented, of ascertaining whether the ideas I had formed of the pathology of this disease were more correct than those generally entertained.

I am well aware that blood-letting has been, and perhaps is, often employed * in the treatment of erysipelas; but it is not a general practice; and the writers of greatest authority represent it as admissible only in certain cases and forms of the disease, of comparatively rare occurrence. In proof of this, it will be sufficient to quote a few of the most esteemed modern authors. Richter recommends, in the common febrile rose, laxatives and diaphoretics when the disease is slight; and emetics when it is more severe; and in the inflammatory rose, *erysipelas phlegmonodes*, he says the antiphlogistic treatment, and even detraction of blood, are here proper. "But in no other inflammations must we exercise so much caution in their employment as in the rose; especially when, at the same time, bilious symptoms are present. Commonly local bleedings are sufficient. Leeches are applied behind the ear, and sometimes it is necessary to repeat them. According to rule, it is only the rose of the face, which attains such a degree as to indicate the detraction of blood, especially when there are symptoms of sympathetic inflammation of the brain, violent headach, strong pulsation of the carotids, delirium, and coma. In such a case, sometimes even a small general bleeding is necessary; by which means, undoubtedly, the termination in suppuration, which is always dangerous, may be avoided." † Reil expresses a very similar opinion. "If the rose be complicated, especially with general fever, with inflammation of the brain and of the lungs; and if this fever, as well as the rose, have the character of synocha; if the patient be young, plethoric, and robust, we must let blood once and again, and, after the venesection, apply leeches. But blood must be drawn only when it is indicated, and not more than is indicated; especially as the rose is apt to arise in a concurrence of circumstances which do not bear large evacuations of blood." ‡

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* Mead, Sydenham, Cullen, Burserius, &c. &c.

† Die specielle Therapie von D. August. Gottl. Richter. II^{ter} Band. Berlin, 1813, p. 225.

Callisen does not even allude to blood-letting, when he enumerates the remedies employed in erysipelas. Similar cautions regarding the use of blood-letting in this disease, are given by the French popular writers on Surgery. Desault admitted two species of erysipelas, the bilious and phlegmonoid. In the former, which, he says, is the common and genuine form of the disease, he trusted entirely to antimonial emetics; and expressly observes, that "the disease was more obstinate and severe, when the patients had been bled before admission into the hospital, and especially when it had been twice or thrice repeated." * Renauldin, author of article Erysipèle, in the *Dictionnaire des Sciences Medicales*, also recommends the use of emetics generally, conceiving the disease to consist in a kind of bilious plethora; but adds, "that if the patient be vigorous, and of a sanguine temperament, there is not a better means of calming the violence of the symptoms than by opening a vein of the arm, or rather of the foot, when the erysipelas is seated in the head, and threatens that part with sanguineous conjections."

To show the general opinion entertained in our own country, it will be sufficient to quote one or two of the most popular authors. It is unnecessary to go farther back than the deservedly celebrated Mr John Pearson, who, in speaking of the treatment of acute erysipelas, says, "General bleeding is not recommended in this place as a cure for erysipelas, in the same sense in which it may be said to remove an inflammation; it is advised with the intention of obviating the effects produced in the system by so severe a stimulus as acute erysipelas. Indeed, cases very rarely occur in large towns where bleeding is at all admissible; and a repetition of the operation will very seldom be necessary or advisable."

In regard to œdematous erysipelas, he says, that "general bleeding is inadmissible, almost without exception. The propriety of topical bleeding is chiefly applicable to those cases where there is danger of an affection of the brain: but very great nicety is required in determining upon this evacuation, where there is the least disposition to a *metastasis.* I have seen the most dangerous symptoms immediately supervene, to the loss of a very small quantity of blood." †

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‡ J. de Reil Fieberlehre. I^{ter} Band. p. 369. 8vo. Hall, 1804.

* Œuvres chirurgicules de P. J. Desault, par Bichat. Tome 2d, p. 589. 8vo. Paris, 1801.

† Principles of Surgery, for the use of Chirurgical Students. By John Pearson, 8vo. London, 1808.

Dr Willan is equally hostile to venesection. "All the ancient writers, except Galen, recommend blood-letting as a principal remedy in the treatment of erysipelas. This practice must evidently be improper in the three forms of the disease last described; and even in the *erysipelas phlegmonodes* it does not always appear necessary. When the blood drawn is sizy, practitioners are often induced to bleed a second time; but we generally find, in London, that repeated blood-letting aggravates the symptoms, and protracts the disease. In a comatose, or apoplectic state, the application of leeches, or cupping-glasses at the nape of the neck, may be advisable." *

Dr Bateman follows Dr Willan in his cautions respecting blood-letting; and in the latest work which has reached me, and one of great merit, there is so guarded a recommendation of its use, that it would rather deter than encourage a young practitioner to have recourse to it. "I have rarely practised it myself; but when I have, the symptoms have abated in consequence, but the recovery has been protracted." †

These quotations are sufficient to show, that many of the chief authorities in pathology consider diffuse inflammation of the cutaneous texture as different in kind from inflammation of the cellular or serous membranes; or, at least, that the skin is most commonly attacked with an inflammation different in kind from that which commonly affects the other textures, and requiring an almost opposite mode of treatment; and they distinguish them by the names of adhesive or phlegmonic inflammation, and disjunctive or erythematic inflammation. But I have long been inclined to adopt a simpler view of the subject, and to consider inflammation, upon whatever proximate cause it may depend, as identical in kind, and differing only in degree, or in respect to the texture or functions of the part affected; and that, with slight modifications, the same treatment is adapted to all.

Formerly, it was considered as a problem of the greatest importance; and it certainly was one of the greatest difficulty, to be able to determine, in cases of general fever accompanied by symptoms of pectoral inflammation, especially when the local inflammation supervened, as it often did, towards the conclusion of the fever, what was the nature of the fever; because a very different treatment was supposed to be necessary in *pneumonic*

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* On Cutaneous Diseases. By Robert Willan, M. D. 4to. London, 1808.

† Observations on some of the General Principles, and on the particular Nature and Treatment of the different kinds of Inflammation. By Q. H. James, Surgeon to the Dover and Exeter Hospital. 8vo. London, 1821. pp. 245.

typhus, as the disease was called, from what was necessary in pure inflammatory pereumonia. Often have I seen the most urgent inflammations of the lungs treated with large doses of camphor, musk, opium, wine, and even brandy, because it was accompanied with typhus fever; and although dissection showed the same pathological changes that occurred in the purest synochal inflammation of the lungs, still venesection, and even a simple purgative, was dreaded, as, from the character of the fever, all depletion was held to be inadmissible. This error is now pretty generally exploded; and when symptoms of local inflammation of an important organ occur, we do not hesitate to bleed locally and generally, even though the accompanying fever should be of that type commonly called typhoid, and, in fact, we find that the fever is relieved at the same time with the inflammation. Local inflammation may, and every day does occur, in persons the most debilitated, whether from preceding febrile or chronic affections; and it can only be counteracted by the same remedies, modified in degree and application, which are used against it in the most vigorous individuals.

But as I believe that there is no such thing as typhoid, or asthenic inflammation, neither do I conceive that the disease differs in kind, or requires an opposite treatment because it attacks a different texture, and is diffuse and erratic, instead of being limited and fixed. In scarlatina, of which a principal symptom is diffuse and somewhat erratic inflammation of the skin, cold water, purgatives and venesection, have been successively employed with increasing advantage; and the treatment of angina maligna itself requires the same general remedies to be employed with greater boldness, with attention to the local symptoms. The transference of the same therapeutic principles to erysipelas was obvious; and experience has, I think, supported the theory.

CASES.

CASE I.—CATHERINE M'DONALD, æt. 24, married, nursing.—*13th May.*—Is affected with tumefaction of a dusky red colour, and pain, of the face and scalp, with coma, and a partial loss of memory. The palpebræ are closed, and discharge a little purulent matter. She complains of general soreness, sickness, and inclination to sleep, without the power. Pulse 114, full and strong; heat 96; respirations 30; skin hot; tongue whitish, dry in the middle, and moist on the edges.

Complaints commenced on the 6th inst., with general soreness and pains, chiefly affecting her head and face. Next day, redness, pain, and swelling of the face and scalp came on, with large blisters on her cheeks, which, when punctured, discharged a watery fluid. Has taken some opening medicines; has also had fomentations and a vomit, from which she thinks she was worse.

Mittatur sanguis ad ℥xx. Sumat bolum jalap. composit.

14th.—Was bled to twenty ounces; blood buffy and cupped, with copious serum; seven stools from bolus; had a restless night, from frequent retching of much tough phlegm; inflammation gone from the face, which has desquamated; it is still however swelled, especially on the left side; can open her eyes; and complains only of sickness; pulse 106, still hard; heat 98; skin natural; tongue foul and parched, with bad taste; great thirst; urine natural.

Impon. vesicat. sat amplum pone aurem sinistr. Repet. V. S. ad ℥xx.

15th.—Bled to twenty ounces; blood presents a thick buffy coat, with copious serum; blister rose well; had a bad night from sickness; moans a great deal; eyes water much; left temple swelled, tense, and puffy, tender on pressure; some torpor; but complains of want of sleep, and of severe soar throat; pulse 100, not full; tongue foul; very bad taste of mouth; no dejection; urine ℔j., high coloured, with a light cloud; epigastrium tender.

Admov. hirud. xx. epigastrio.

℞ Sulphat magnes ℥j. Tartrat. antimon. gr. iv. Aquæ ℥xij. capiat ℥j. omni hora.

16th.—Was relieved by the leeches; erysipelas gone; she continued to improve, complaining principally of bad taste of mouth, and tenderness of epigastric and umbilical regions, till the 21st, when she was perfectly convalescent.

Case II.—Helen Finlay, æt. 30, nursing. Was admitted a patient into the Clinical Wards on the 7th May, for a severe affection of the head, arising from a blow. On the 11th, an incision was made on the tender part, down to the periosteum, which gave instantaneous relief; and she continued well till about three P. M. on the following day, when she was attacked by a severe pain around and within the left ear, which she described as being unlike the former pain. On the 13th, it had increased over the left temple, and darted towards the eye; the parts were tender and puffy; but there was no appearance of external inflammation. A second incision was accordingly made, which gave great pain for several hours, but relieved the pain of head and fulness of ear.

Applic. cataplasm. capiti et postea curetur incisio unguento hydrargyri.

15th.—Scarcely any pain of the head; but complains of stiffness of the neck.

16th.—Bad night, from pain of the incision; lymphatics of left side of the neck swollen, hard, and very tender, with great stiffness, and general tenderness of the neck.

17th.—Pain of neck and head a little relieved by fomentations; it is still, however, very severe; had a bad night, and has been sick; she has also had frequent cold and shivering fits, succeeded by flushing and sweating of left side of the face, which is swollen and very tender; no feeling in the wound; pulse 120, febrile; tongue foul; no appetite; great thirst; six dark dejections from salts.

Emittant. stat. sanguin. ℥xx. et Repet. fot. sæpies indies.

18th.—Bleeding quickly relieved the severity of the pain; had a bad night, from pains and retching; wound disposed to slough; face more swelled, and neck is very tender; pulse 120; skin very hot; tongue thickly furred; no appetite; great thirst; five watery dejections; urine turbid.

Repet. V. S. ad ℥xx. Let hot dressings be applied to the wound.

19th.—Twelve ounces of blood drawn with relief; in one vessel, blood buffy and cupped, in the other not; hot dressings agree; passed a bad night, sensible in the earlier part, but very delirious during the latter; complains much of sickness, but of no pain; great retching; wound suppurates freely; edges inflamed; the nape of the neck, and all the left cheek, are very much swollen, red, and very tender on pressure; left eye closed; epigastrium tender; pulse 130, full; heat 105°; respirations 40, and laborious; skin ardent and dry; tongue very foul; no appetite; great thirst; four loose stools.

Admov. vesicat. satis amplum inter scapulas; et hirud. xx. epigastrio.

20th.—Leeches bled well, with great relief; blister has not operated well from frequent shifting; was very restless and delirious during the night, but is more composed this morning; swelling of face increased; both eyes completely closed; redness less vivid, and in patches, with defined margin in some places; considerable hardness at the nape of the neck; pulse 116, soft, natural; heat 104½; respirations 28; tongue very foul; no appetite; great thirst; two dejections; urine ℔j., with a slight cloud.

℞ Sulphat. magnes. ℥j. Tart. antimon. gr. iv. Aquæ ℔j. capiat ℥ij. omni bihorio.

21st.—Only three doses of solution taken; has been in a state of constant delirium since yesterday's visit; face more swelled; both eyes still closed; some desquamation; desires drink, but appears to have some difficulty in swallowing. Pulse 126, rather weak; heat 104½; tongue very foul; no stool since the 19th; a purgative enema given immediately before the visit being partially returned with little feculent matter.

Repet. stat. enema purgans. Sumat. tinct. convolv. jalap. ʒij. omni bihorio incipiens statim. Intr. alia.

22d.—Clyster produced several copious alvine evacuations; had a bad night; was very delirious, talking constantly; four doses of tincture taken, and four stools passed unconsciously; face still much swollen; the skin is corrugated, and there is considerable desquamation; eyes closed, with purulent discharge. Pulse 124, of moderate strength; heat 104½; respiration easy; skin hot to feel; no appetite; great thirst; urine dark, with sediment; blister discharges freely.

Intr. tinct jalap. Injiciatur statim enema purgans. Admoveantur fronti hirud. xij. et sumat statim haustum anodynum antimonialem.

23d.—Injection brought away a good deal of natural loose stools; nine leeches bled well; anodyne draught procured deep sleep till two this morning, when she awoke free from delirium; and she makes no complaint. Erysipelas still of a lively colour on the chin. A dark-coloured erysipelatous redness is spreading over the shoulders and neck; there is also a considerable bruise on the right hip from lying, of a dark colour, without surrounding erythema; swelling of the upper part of the face much fallen. Pulse 104, small; heat 100; respirations easy; skin cool; tongue foul; great thirst; two small loose stools. Asked for food this morning.

Admov. hirud. xij. summo sterno. Illinatur pars contusa tinct. saponis cum opio. Let her have a pound of beef-tea.

24th.—Twelve leeches bled well, and she appears more composed; makes inquiries after her child; slept little during the night, but there was no delirium; called frequently for drink; has taken a little bread, softened with warm water; had three loose stools last night; and a purgative injection given this morning brought away some natural feces; passes urine in bed, but consciously; upper part of the face much less swelled, and desquamating freely; erysipelas spreads downwards, both on the back and around the neck, and she makes little complaint; bruised spot on the sacrum has no surrounding inflammation, it is very black and hard, and does not appear to be deep. Pulse 124, rather feeble; heat 102; respirations 28; tongue foul, but moist; little appetite; great thirst.

Capiat acidi sulphurici aromatici gtt. xx. ex aquæ cyath. omni bihorio.

25th.—Had a copious natural stool last evening, and felt great relief from bathing her face and eyes, which enabled her to open the eyelids; slept till one this morning, without any delirium; and when she awoke, was quite sensible, and appeared refreshed; erysipelas continues to spread down the back. Pulse 128, of more strength; skin natural; tongue white and coated; thirst not so great; one loose stool; urine, ℔ii. with very copious whitish sediment.

Contin. acid. sulphuric. aromatic. Let her have tea when she wishes it.

26th.—Medicine taken five times; had a good night, and appears more composed. Erysipelas spreading down the back, but not so florid or tumid; complains of bad taste and debility. Pulse 100, of moderate strength; heat 98; tongue rather dry; appetite tolerable; thirst not so great; five stools; urine abundant.

Contin. acid. sulphuric. aromatic.

27th.—Had a good night, and took some food yesterday evening with relish; reports herself much better, and tired of lying; erysipelas continues to spread, but the colour is more faint; bruise on the hip is stationary; no return of the original affection of the head. Pulse 90, intermitting; heat 98; tongue white and coated; appetite and thirst moderate; four greenish loose stools.

Contin. acid. sulph. aromat. Let her have, at her own desire, four ounces of currant jelly, and half a bottle of porter, daily.

28th.—Porter taken, and agrees; had a tolerable night, and thinks herself better; dozes frequently; erysipelas not spreading, and the redness is very faint. Pulse 96, intermitting; three dejections.

Contin. omnia.

29th.—Had a tolerable night; discoloration of skin nearly gone; and there is some slight livid tumefaction of the eyelids. Pulse 98, of good strength; tongue dry; appetite much better; three dark dejections; urine ℔iss.; considerable listlessness and debility.

Intr. medicam. Let her have half a pound of steak daily, with four ounces of port-wine made into negus.

30th.—Erysipelas has terminated, and the functions are become natural.

CASE III.—ELIZABETH MORRISON, æt. 23, servant. Was admitted into the Clinical Wards on the 12th June, for a severe attack of pleuritis, for which she had been bled to 30 oz.; and purgatives, blisters, and colchicum had been used. She had nearly recovered, when, on the evening of the 17th, she had a shivering fit, followed by coldness during the night, and a flushed face next morning; there was also great febrile excitement, headach, and pain of the back. Pulse 140, sharp; respirations about 60, irregular; great perspiration; tongue tremulous, with white fur; great thirst; no appetite; no dejection.

Emitt. stat. sanguin. ℥xx. Injiciatur enema purgans. Bibat etiam potum vegetabilem acidum ad libitum.

19th *June*.—Only 14℥. of blood were obtained; gave considerable relief; blood buffy and cupped, with copious serum; had a bad night from thirst and sickness, with much delirium; has great headach; pulmonic affections have ceased. Pulse 132, neither full nor hard; skin hot, but moist; tongue white; no appetite; great thirst; four stools; urine ℔ iss. with a cloud.

Abscindatur coma. Contin. potus.

Hor. octav. vesp.—Has severe pain in the left breast, which is swollen, red, and very tender. Pulse 140, hard and sharp; heat 101½; tongue white; bowels not open; urine high coloured.

Repet. V. S.

20th *June*.—Bled to fourteen ounces, and felt relieved; blood very buffy and cupped, with copious serum; hot fomentations of vinegar and water gave great relief to the breast; was attacked during the night with vomiting and purging; vomiting abated on taking three doses of a mixture of magnesia and rhubarb in peppermint water;

breast not so painful, and is less swelled. Pulse 108; heat 101; tongue not so white; frequent dejections.

Repet. fot. acet. tepid. Capiat infusi colombæ ℥ij. omni bihorio.

21st.—Six doses of bitter infusion taken; fomentations once used; pain, swelling, and redness of breast much diminished. Pulse 100, good strength; two stools.

Contin. infus. colomb. Let her have ℔j. beef-tea daily.

22d.—Has pain of bowels, which she ascribes to the mixture; left breast easy and less swelled. Pulse 100, good strength; three dejections.

Intr. infus. colombæ. Capiat sulphat. magnes. ʒj. ex aquæ cyath. bis indies.

23d.—Had a slight return of pain in the left breast last night; relieved by the fomentations; is not so much swollen, but tender on pressure; no redness; begins to desquamate. Pulse 108, good strength; one dejection.

Contin. fot. aceti mammæ sinistræ. Capiat elect. laxantis ʒj. omni hora ad catharsin.

24th.—Breast quite easy.

25th, 26th.—Improves generally. 27th.—Convalescent.

CASE IV.—CATHARINE M'INTYRE, æt. 20, servant, full habit. Was admitted into the Clinical Wards on the 10th June for continued fever, for which she had been treated antiphlogistically with copious venesection, and a blister had been applied to the sternum. On the 19th, a diffused inflammation appeared on the left breast, which is swollen, painful on pressure, but not much indurated. Passed a bad night. Pulse 120, moderately full; heat 101; skin hot, and very moist; face flushed; great headach; no delirium; tongue white; no appetite; great thirst; three dejections; urine ℔i.

Emittant. stat. sanguin. ℥xx. Sumat etiam sulphat. magnes. ℥j. cum tartrat. antimonii gr. ij. ex aqua.

20th *June.*—Solution operated twice, with some sickness; twelve ounces of blood drawn; felt great relief at the time; blood buffy, cupped, with copious serum; had a good night after an anodyne antimonial draught; pain of breast abated, but redness and swelling continue. Pulse 112, small and sharp; heat 102; skin hot; tongue white; two dejections.

Contin. mist. sulphat. magnes. et tartrat. antimon.

21st.—Had a good night, without the draught; pain of left mamma nearly gone, except on pressure; less general swelling, but the redness continues without any vesications. The right breast is also affected; especially the lower part, where it is red and swollen, without any pain. Face not so flushed; less headach; and she is, upon the whole, much better. Pulse 116, somewhat sharp; tongue white; less thirst; two dejections; urine high-coloured.

Contin. omnia.

Hor. octav. vespertin.—Left breast much more swollen, and painful; and the redness is extending rapidly, of a more dusky colour, and some large vesications have arisen. The right is swelled and inflamed; but not nearly so much as the left. Countenance flushed, and anxious. Pulse 118, of good strength; heat 101; skin hot; tongue white; urine dark, with a cloud; two dejections.

> Emitt. sang. ℥xxx.; let the dilute saturnine solution be applied to the breasts, both of which are to be suspended by bandages around the neck.

22d.—Pain very much diminished, as well as the swelling and redness; blood buffy; crassamentum contracted, with copious separation of serum. Cold lotions applied constantly, and felt comfortable; vesications on left breast broken; face still somewhat flushed, but lips very pale. Pulse 126; heat 101; tongue white; two dejections; urine two pounds.

> Contin. lotiones frigidæ, et bibat potum acidum vegetabilem ad libitum.

23d.—Tolerable night; lotions applied; but she has more pain in the left breast; and two small, but rather deep, ulcers have succeeded the first vesications. There are also several fresh blisters on the left mamma. The dusky red colour is increasing, and there is much œdematous swelling; there are also some small ulcerations on the lower part of the sternum, where the blister was applied for her former affection. Face less flushed; no delirium; headach continues. Pulse 124, of good strength; heat 101½; skin warm; tongue white; little appetite; great thirst; four dejections; urine free.

> Curentur ulcera unguent. acetatis plumbi. Contin. lotio frigida. Capiat bolum jalap. composit.

24th.—Breast still swelled; and she says there is no pain except in the ulcers. Pulse 114, good strength; tongue white; no appetite; great thirst; three dejections; countenance natural.

> Contin. medicam.

25th.—Had a good night; but complains of violent pain of head and abdomen. Pulse 110; heat 103; three watery dejections.

> Continue.

26th.—Shortly after the visit, was seized with rigors, lasting about an hour; and a large vesication appeared on the left mamma. The left side of the neck was also much swollen. Twelve leeches were immediately applied to the neck; and the body was sponged with cold water. Had a bad night from rigors, which were relieved by an anodyne camphorated draught.

27th.—Has no pain; ulcers in breast granulating; no dejection since the 25th.

> Capiat stat. pil. colocynthid. gr. x. et repet. omni bihorio ad catharsin.

28th.—Bowels freely open from ten pills; inflammation of breast has subsided; the new vesications have desquamated, and the ulcers are granulating rapidly. Pulse 116; heat 100½; tongue white; skin natural; appetite indifferent; urine free.

Contin. unguent. Intr. alia.

29th.—Good night; erysipelas gone; parts have desquamated, and the ulcers are healing.

CASE V.—ISABELLA LAIDLAW, æt. 30, servant, married. Was admitted into the Clinical Wards on the 13th June, affected with *cynanche tonsillaris.* On the 19th, complained of the left temple, which was swollen, red, and very painful. She observed it first on the evening of the 17th. Pulse 120, small; tongue foul; no appetite; great thirst; five stools; urine ℔j.

Applicentur tempori affecto lintea solut. dilutior. acet. plumbi madida.

20th June.—Cold lotion agrees; had a good night; and pain of left temple is diminished. There is still, however, considerable redness and swelling. Pulse 112; bowels not open; tongue white; urine scanty.

℞ Sulphat magnes. ℥ j. Infus. sennæ ℥ vj. Solve. Capiat ℥ ij. omni bihorio ad catharsin. Contin. lot. frigid.

21st.—Cold lotions continued; and three doses of senna have operated well. Erysipelas is now almost gone.

22d, 23d, & 24th.—Improves generally.

CASE VI.—MARY DUNSMORE, æt. 54, married. Admitted into the Clinical Wards on the 16th May, bedfast with chronic diarrhœa for many months; had a bad night on the 21st June, from return of pain in the ear, lately complained of; and it is now very red and tender, where a blister was formerly applied. On the 23d, the erysipelatous redness, with little swelling, and no pain, began to extend over the cheek; pulse 120, small; skin dry; tongue foul; no appetite; great thirst.

Applic. solut. acet. plumbi dilutior parti inflammat.

24th.—Erysipelas has declined upon the left ear, but is very vivid on the left cheek, and is extensively spread on the right cheek and brow; pain has abated since the cold lotions; no vesications; and the tumefaction is considerable; pulse 100, rather small; tongue foul; no appetite; thirst urgent.

Habeat vini rubri uncias sex indies forma potus. Contin. lotio frigida.

25th.—Vomits every thing but the wine; erysipelas spreading, and of a dark red colour; left ear swelled; pulse 100, small.

Continue.

26th.—Great headach; erysipelas now covers the whole face, except the lips and chin; colour rather dark; considerable tumefaction; no vesications; no vomiting; pulse 98; tongue red, not foul; great general debility.

Habeat vini rubri ℥viij. indies. Contin. lotio frigida.

27th & 28th.—Feels easier; redness and swelling of the face declining; and the cuticle is desquamating.

29th & 30th.—Improves generally; erysipelas gone.

CASE VII.—ELIZABETH NELSON, æt. 29. Was admitted into the Clinical Wards on the 20th June, for an œdematous affection of the right leg, with great thickening of the skin, resembling elephantiasis. On the morning of the 25th, was attacked with pain of left leg, and shivering; and, in the evening, erysipelas was observed. She passed a bad night, and on the following day had great headach; face much flushed, and swollen; pulse 115, full; tongue very much coated; no appetite; great thirst; no dejection; urine high-coloured.

Emitt. stat. sang. ℥xxx. Capiat infusi sennæ ℥iij., et repet. omni tertia hora ad catharsin.

27th.—Bled to twenty-six ounces, and fainted; three doses of senna operated well; left leg not so red; countenance natural; pulse 92; urine ℔j., light-coloured.

28th.—Three doses of senna taken, produced three dark-green dejections; a fresh patch of redness has appeared upon the calf of the left leg, but not very vivid; the former rose has declined; tongue foul, with bad taste; urine scanty and turbid.

29th.—Erysipelas gone, but considerable œdema remains. *Hor. octav. vespertin.* Has been complaining of pain of head, and heat of skin all day; and was attacked, this evening, with a burning pain of the right thigh, which is generally affected with swelling, of a deep scarlet colour; countenance flushed; has headach; skin becoming moist; no dejection; pulse 112, small and hard.

Emitt. stat. sang. ℥xxviij. Injiciatur statim enema purgans.

30th.—Bleeding gave great relief; blood cupped and buffy; injection operated well; had a tolerable night; redness of the thigh much less vivid, but spreading; no vesications; pulse 76, small; tongue white; four dejections.

1st July.—Redness disappearing on the thighs, but is spreading up the hip and back; pulse 88, natural; skin moist; tongue much furred, with bad taste; one dejection; urine one pound, high-coloured.

Sumat pil. colocynth. gr. x. bis indies.

2d.—Erysipelas disappearing, and has not been so well for two years past.

CASE VIII.—MARY ADAMS, æt. 80. Was admitted into the Clinical Wards on the 27th June, affected with general tumefaction of the face and head, of a deep red colour, and accompanied by a painful burning sensation in the parts so affected; eyes nearly closed; pulse 120, small, rather hard; respirations 26; heat 96; tongue clammy, coated white; no appetite; great thirst; bowels open; urine sometimes scanty.

On the morning of the 24th, was seized with rigors, shortly afterwards followed by pain, swelling, and redness of the face and head. Rigors have been frequent since the attack; and the erysipelas has become worse daily.

Emitt. sang. ℥viij.

28th.—Pain and swelling of face abated since the bleeding; blood slightly buffed, and cupped; feels greatly better; face not so red; eyelids begin to desquamate; vesications on nose full. Pulse 86, soft; heat 98; tongue loaded; appetite good; thirst moderate; no stool; urine less natural.

℞ Sulphat. magnes. ℥j. Tartrat. antimon. gr. iv. Aquæ fontan. ℔j. Solve. Capiat ℥ij. omni hora.

29th.—Solution operated well; colour and swelling of upper part of the face greatly diminished, and feels much better. Pulse 76; tongue dry and clean; thirst less; one stool.

Contin. solut. sed capiat ℥j. solummod. omni bihorio.

30th.—Eight doses of solution taken, followed by seven stools; face much improved. Erysipelas does not spread.

July 1st.—Face desquamating; continues to improve. 2d, 3d, 4th,—Improves in every respect. 5th.—Convalescent.

Case IX.—Angus M'Kay, æt. 38, fisherman. Admitted into the Clinical Wards on the 26th June, affected with sore throat resembling sibbens. On the 9th of July complained of a painful swelling in the cartilage of the left *ala nasi*, which subsided on the application of a leech. On the 12th, the same part of the right *ala nasi* was similarly affected; and the pain abated considerably on the application of a leech. On the 14th he complained of swelling and pain in the parotid and sub-maxillary glands; with some salivation from mercury, which was intermitted. On the 15th, about 12 *a. m.* was seized with coldness. Pulse 96, strong and throbbing; tongue furred, and dry in the middle.

Emitt. sang. ℥xx. et hora somni habeat haust. anod. antimon.

16th.—Venesection gave some relief; blood showed no buff, and little serum; complains much of pain of throat, which is swollen both internally and externally. Pulse 130, full; heat 101; great thirst; slight cough.

℞ Olei crotonis tiglii gtt. j. Olei ricini ℥ss. Aq. menth. pip. Aq. font. ā ℥ss. Fiat haust. stat. sumend.

17th.—Bowels open from the draught; has great difficulty in swallowing; external swelling of fauces greatly increased; nose swollen, hard, and red.

Admov. faucibus externis emplastrum vesicatorium, et ℞ Tartrat. antimon. ʒj. Aquæ ℥ij. Solve. Capiat ʒj. omni semihora sine potu ad vomitum usque.

18th.—Vomited some greenish matter, after two doses of the solution. Blister applied round the throat; but it is much more swollen, especially on the left side. Inflammation of the nose increases, and is spreading over the cheeks with great pain; the throat appears to be inflamed internally, and his tongue is very red and coated; eyes inflamed, and discharge purulent mucus; feels much weaker; slight delirium. Pulse 128, full; heat 102.

Intr. medicam. Emitt. stat. sang. ℥xxx. et Capiat tinct. digit. gtts. xii. quater in dies, ex mist. mucilaginosæ ℥ij.

19th.—The abstraction of 30 oz. of blood gave great relief; and 24 oz. more were taken with additional relief. Blood very buffy; slept well, and feels better; swelling is more diffused, but there is little redness. Bullæ have scabbed on the centre of each cheek; eyes closed, and discharge purulent matter. Pulse 108; large. Appetite tolerable; thirst much less; bowels costive. Tongue red, and horny in the centre; furred at the edges.

℞ Sulphat. magnes. ℥j. Infus. sennæ ℥vj. Solve. Sumat ℥iij. statim, et repetatur dosis si opus sit. Let him have ℔ ss. beef-tea daily.

20th.—Face still much swollen, and eyes closed, without great redness. Tongue red, tremulous, horny, and cracked in the centre; furred on the edges. Pulse 116, large and strong; heat 104; skin pungent, without perspiration; great thirst; appetite tolerable; bowels very open from medicine.

Intr. solutio purgans. Repet. V. S. et eliciantur sang. ℥xxx. Bibat diluentia tepida.

21st.—Twenty-eight ounces of blood taken with some relief, but he feels rather weaker; blood not so much buffed as formerly, with scanty separation of serum; considerable wandering; pulse 112, full and large, not hard; tongue nearly as yesterday, but horny stripe is narrower; bowels regular; makes no complaint.

Contin. pot. tepid, et foveatur facies aqua tepida cum lacte.

22d.—Is delirious, but is sensible of it. Erysipelas much declined, and does not spread; reports himself easy; pulse 116, full; tongue red, and very foul; no swelling of salivary glands; thirst less; appetite bad; bowels regular.

Sumat stat. sulphat. magnes. ℥iss. ex multa aqua.

23d.—Improves generally; eyes open; pulse 68, full and firm.

24th, 25th, 26th, 27th.—Complains only of weakness; convalescent.

Case X.—*July 12th.* William Latimer, æt. 36, coachman. Complains of headach and pain of back, with a sense of coldness in the breast and limbs. Has a slight cough, with increased secretion of saliva, and some viscid expectoration. The velum and uvula are also covered with small white specks. Puse 108; heat 101; skin hot; tongue loaded; bowels regular; urine high-coloured.

On the 8th inst. was seized with pain of back and limbs, accompanied with rigors, having been exposed, on the 6th inst., in wet clothes.

Cap. stat. bol. jalap. composit.

13th.—Awoke, in the latter part of the night, with pain of right cheek, shooting to the ear; and it is now covered by a flat circumscribed swelling, of a pale livid colour. Cough short and frequent, with considerable expectoration; no pain of breast; pulse 108, full; heat 102; tongue very much loaded; bad taste of mouth.

Fiat stat. V. S. ad ℥xx, et foveatur gena aquâ calidâ cum aceto.

14th.—No obvious effect from bleeding; blood very buffy; had a bad night; and the inflammation now extends over the whole cheek;

the ear is worse, and covered with large vesications; great swelling behind the angle of the right jaw; no sickness, or pain of epigastrium; pulse 116, full; heat 101; tongue loaded.

Intr. medicamenta et ℞ Tartrat. antimoni. ʒi. Aquæ fontan. ℥ii. solve. Capiat ʒi. sine potu omni bihorio.

15th.—Eight doses of solution taken. Vomited some tough, green, ill-tasted matter, after the third dose, and only once after. Quiet night, without sleep. Redness and swelling extend, but pain not so great; right eye nearly closed, and vesications on the right cheek scabbed; some nausea, with bad taste of mouth; pulse 116, of good strength; heat 100; tongue loaded; bowels open; no delirium.

Contin. solut. tartrat. antimon.

16th.—Medicine taken several times without producing sickness. Feels weaker, and complains greatly that he has no sleep. A large vesication has burst on the left cheek. Tumefaction and redness extend down the right side of the neck; pulse 116, not so full; heat 99; tongue loaded, and dry in the middle; appetite better; thirst great; bowels open; no delirium, or pain of epigastrium.

Intr. solutio tartrat. antimon. et sumat statim haustum anodynum antimonialem.

17th.—Antimonial opiate draught gave great and immediate relief. Has slept well during the day and the night. Erysipelas does not extend; bullæ all scabbed; pulse 100; bowels open; urine natural; little thirst.

Repet. haust. hora somni.

18th.—Great pain of head, rendered very acute on the least motion, prevented sleep. Feels as if his head was greatly enlarged; face and right ear desquamating; left ear acutely inflamed, and the erysipelas extends down the back of the neck; pulse 108, moderately full; heat 99½; appetite bad; great thirst.

Emitt. sang. ℥xx. et ℞ Tartrat. magness. ℥j. Tartrat. antimon. gr. iv. Aq. fontan ℥x. Sumat. ℥ij. omni bihorio.

19th.—Slight relief from the bleeding; and, as the blood presented an uncommonly thick buff, and there was no alteration in the pulse, twenty ounces more were taken in the evening with decided relief. The blood from the second bleeding also had a very buffy coat. Had a good night; complains of sore throat, and speaks in a whisper. Erysipelas does not spread; sensation of enlarged head has ceased; no delirium; heat 100; takes no food, but desires acids.

20th.—Progress of erysipelas has been checked, and the skin begins to return to its natural colour. 21st, 22d, 23d.—Complains of weakness. 24th.—Convalescent.

I have preferred giving an abstract of each of the cases which occurred during the course, to making a selection of those which might appear to me most striking and conclusive in favour of my opinions; because the history of the epidemic, if it may be so called, is thus rendered much more complete and authentic.

In this way, not only a just idea of the general form of the disease is communicated, but also the comparative frequency of the symptoms, and the variety of their combinations, may be judged of.

There can, I think, be no reasonable doubt that all these cases were essentially the same disease; differing in extent, severity, duration, and in some of the external symptoms. According to Cullen's Nosology, they are all referable to the order of Exanthematous diseases, or diseases in which a cutaneous eruption, or inflammatory state of the skin, is preceded by general pyrexia. And here I cannot avoid expressing my regret, that Willan, to whom we are so much indebted for the introduction of a definite terminology adapted to cutaneous affections, and to the fuller exemplification of the advantages to be derived from attention to precision in the description of disease, should have employed the term Exanthematous in a totally different sense from preceding writers; and thus have given rise to confusion, while he leaves the characteristic character of a most natural family of diseases without a common name. Of the genera into which Cullen has divided the order Exanthemata, the only genus to which these cases can belong, is Erysipelas; although some of them, from the absence of all vesication, do not correspond with the definition of any of the species. To suit them and similar cases, a species, which might be called *Erysipelas læve*, should be added. Cullen's distinction between Erysipelas and Erythema, although very generally overlooked, is well founded, and truly philosophical.* The external appearance in both may be exactly alike; but in Erysipelas it is symptomatic of the general affection, in Erythema it is primary; and the general affection, if any be present, is only symptomatic. Erythema may be at any time excited by applying a sinapism to any part of the body. The skin will be affected in a manner very much resembling the external character of erysipelas; but the essential difference of the two diseases is obvious. The one is a simple Phlegmasia, the other an Exanthema; the one Erythema, the other Erysipelas.

The varieties of the disease, as observed in these cases, is irreconcileable with Willan's Nosology of Cutaneous Diseases, now so generally followed, which would require them to be referred not only to different genera, but even to distinct orders. In five of the cases, Nos. 2, 3, 5, 6 & 7, there were no vesications. These are, therefore, to be referred to Willan's order of *Exanthemata*, or rashes, and to his genus *Erythema*. Vesications occurred in the other five; which, therefore, belong to the order *Bullæ*, and the genus *Erysipelas*. But assuming, as I do, that the disease in all was essentially the same, a Nosology which dissociates them on account of the difference of an accidental symptom, cannot be founded on proper principles. Even if the presence or absence of vesications indicated distinct degrees in the severity of the disease, the objection would be valid; but this is not the case; for No. 2, where there were no vesications, but only, as in *Scarlatina*, extensive desquamation, was one of the most severe, while No. 4. and 8. were comparatively slight. The insufficiency of the presence or absence of vesications to constitute an essential distinction in this disease, was strikingly exemplified in cases Nos. 3. and 4., in which it occurred at the same time, and affected the same part, the mamma.

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* An Essay on the Diagnosis between Erysipelas, Phlegmon, and Erythema. By George Hume Weatherhead, M. D. 8vo. London, 1819.

In No. 4, the form and mode of the eruption exactly resembled *Pompholyx solitarius*; but the inflammation round the bullæ, and the fever, are inconsistent with Bateman's description of that genus. It was characterized by the vesications appearing in the form of a few large hemispherical bullæ, distinct from each other; and thus presented a very different appearance from common erysipelas, in which the eruption consists of numerous confluent vesicles. It might almost be considered as an example of *Pemphigus*, the very existence of which Dr Bateman doubts, though upon insufficient grounds; and I may here mention, that I have lately seen, in private, a case of undoubted *Pemphigus*, or of idiopathic fever, in the course of which phlyctenæ, or vesications of considerable size, with an inflamed and very painful base, appeared on the fingers and hands, and in the roof of the mouth. The disease occurred in a young lady, and did not affect any other individual in the family. Its duration was about 14 days; and it terminated in the desquamation of large pieces of cuticle, as in scarlatina. In short, it was a case of continued fever, with bullous eruption as a symptom. Dr Willan suggests, that cases such as that now described are instances of erysipelas, with some slight variation; and certainly the distinction between the two diseases is not essential.

From the review of these cases, as well as from many others formerly observed, Dr Willan does not appear to me to have succeeded in establishing real distinctions between the species into which he has divided the genus Erysipelas. *E. phlegmonodes* is described as differing from *E. œdematodes*, in the inflammation being more acute in the former, and the cellular effusion being greater in the latter. The difference appears, however, to be only accidental, and arising from the constitution of the person affected, and the greater or less abundance of loose cellular membrane in the part. What is of more importance, the inflammation and effusion are often directly, and not inversely, as each other, in degree; so that we see a high degree of inflammation connected with great œdema. This took place especially in No. 9, also in No. 1, 2, 3, 4, &c. When there is much cellular effusion, the paleness of the colour is the effect of mere mechanical distension, and not a mark of less active inflammation. Nor does the occurrence of small phlegmons, during or after the erysipelas, constitute an essential character. They were observed in No. 2, 4, 9 and 10, which otherwise differed considerably.

Willan's third species, *E. gangrænosum*, is characterized by its mode of termination, rather than by an essential difference in the disease; and Bateman distinctly allows, that it commences like one or other of the preceding species. When it has a tendency to occur, it may be prevented by proper treatment; and there is little doubt that it may also be produced by improper treatment, when there was no tendency to it. Excepting one case, which came on after venesection, and terminated fatally, and which I shall take another opportunity of describing, no case of *E. gangrænosum* occurred in this course. The case most resembling it in the livid colour of the inflammation, was No. 10.; but whether owing to the active treatment employed or not, it did not terminate in gangrene, and the convalescence was good. In No. 2. there took place two considerable gangrenous eschars on the *nates*, but these parts were not affected with erysipelas; and the affection was entirely the consequence of continued pressure in a system under febrile derangement,—an occurrence which we have had too many opportunities of observing in the late epidemic fever, in spite of the utmost attention to cleanliness, and to the means of obviating the effects of pressure.

Willan's last species, the *E. erraticum*, is characterized by a phenomenon which is rather common to the genus, than characteristic of a specific difference. Mr Pearson considers the progression of the inflammation as belonging to the *E. œdematodes*; but it is not less frequent in the *E. phlegmonodes*, and perhaps more so in the *E. gangrænosum*. The only cases in which the erratic nature of the inflammation did not distinctly show itself, were Nos. 3. and 5. In most of the others, especially Nos. 2, 7 and 10, it was very remarkable; and Mr Pearson's remark, that each renewed accession of the complaint was less and less severe as it receded to a greater distance from the part first affected, was finely exemplified; or, that although the extent of the first and second accession was very evident and well defined, yet it was, in some of the cases, impossible to say when they ceased to take place, as at last the redness amounted to little more than a blush. The most striking instance of this was in No. 6, when, after the redness was observed from the ear and forehead down to the breast, it was traced no farther; yet the whole cuticle of the hands and feet afterwards peeled off, as in *Scarlatina,* showing that the affection had travelled over the whole body.

Of the ten cases, three only were admitted affected with the disease, and seven were seized with it in the wards. I could not, however, satisfy myself that it was owing to contagion in any instance. The first female case was admitted with the disease on the 13th of May; in the second, the nature of the disease was not recognised till the 15th; but it is probable that it began on the 11th, before the admission of the first, with whom she had, moreover, no communication. She might, however, have derived her disease from contagion, as in the Surgical Wards most of the patients on whom slight operations were performed, were liable to be affected with the disease; and she had had incisions made on the scalp on the 10th and 13th. In the same manner, in the Men's Ward, the first patient, No. 10, was admitted affected on July 12th; and a patient already in the ward, No. 9, was seized on the 16th; but they could have had communication only indirectly, as No. 10. had never been out of bed. In all the patients seized in the wards, its commencement and seat seemed to be determined by some previous irritation. In No. 2. it commenced on the head, near an incision made upon the scalp. In Nos. 3. and 4. it attacked the mammæ, and both patients had had blisters applied to the breast. In No. 6. it came on after a blister applied behind the ear; and in No. 9. it began on the nose after the application of a leech. In No. 7. alone, no local cause of irritation could be traced; but the patient was habitually subject to the disease. It may also be remarked, that several other patients had threatening inflammation of the lancet wound after bleeding; but in one only did it proceed to any height, and in her it terminated fatally by gangrene of the brachial and pectoral muscles. None of the lancet wounds of those bled for the erysipelas inflamed; nor did parts to which blisters or leeches had been lately applied, exhibit any unusual appearance when erysipelas, in the course of its progress, reached them. In a few cases they were even applied directly to parts affected, without any bad consequences.

The effects of the remedies employed, and especially of venesection, will be rendered more evident by a short review of the practice in each case.

No. 1. occurred in a healthy married woman, who was admitted on the 8th day after the accession of pyrexia, large vesications having appeared on the 2d. The inflammation was still considerable; great febrile excitement, much gastric affection, disturbance of the mind, and constant moaning. She was bled to 20 oz. on the 8th, and again on the 9th. The blood was very buffy, and was much cupped. The febrile excitement was reduced, and the erysipelas did not extend. A blister was applied behind the left ear on the 9th, where the inflammation was then most lively. It rose and healed well, as if it had been applied to healthy skin. She was, however, far from being restored to health. She had constant retching, with tenderness of epigastrium, for which she was ordered a saline antimonial solution; and leeches, with fomentations, were applied to the epigastrium on the 10th, 14th, and 15th, always with relief. I was chiefly induced to employ leeches to the epigastrium so freely in this case, from Broussais's view of the disease, who considers the cutaneous inflammation as frequently sympathetic of the irritation of the gastric system. "The erysipelas of the head and face are very dangerous, because they induce cerebral and pulmonary congestion, and produce very intense *Gastro-enterite.* We have prevented them from proceeding to suppuration, by removing them very quickly by the application of leeches either to the epigastrium or the part first affected." [*] I had no reason to regret their employment; for the woman, who was in a very alarming state when admitted, was, in 10 days, well enough to be dismissed. The erratic nature of the inflammation, as affecting both the skin and the mucous membrane, was very apparent in this case.

The second case was extremely interesting; and, for some days, there was no hope of the recovery of the patient. This woman was attacked while in the hospital, and perhaps in consequence of the treatment recommended for another affection; increasing pains of head, with a tendency to coma, the consequence of blows received about six weeks before. On May 10th, an incision was made on a puffy swelling of the scalp, over the left parietal bone. She received instant relief; but at 3 *p. m.* she had a sudden accession of pain about the left ear; and, although it is probable this was the commencement of erysipelas, the incision was repeated more freely on the 13th. Instead of relief, this second incision caused intolerable pain, lasting several hours; and the wound, instead of healing immediately, as the first, showed a tendency to slough for some days, which, however, did not take place. She almost immediately complained of stiffness and pain behind the ear, and in her neck, with swelling of the lymphatics, and had cold shiverings during the night of the 16th. Next morning erysipelas was observed to occupy the left side of the head. She was bled to 20 oz. on the 17th, and to 12 oz. on the 18th; but without any obvious effect in checking the disease, or lessening the general excitement. I was therefore deterred from pushing the practice farther; but I applied leeches to the epigastrium on the 19th, and to the forehead on the 22d. As she had constant loquacious delirium, and complained much of want of sleep, an anodyne antimonial draught was also given, which was quickly succeeded by quiet, or rather coma, lasting 24 hours. Leeches were again applied on the 23d to the top of the sternum; and after this she continued to recover, and had no complaint but what arose from the irritation of the eschar, produced by pressure on the nates which appeared on the 23d. A singular observation was made on the pulse of this woman. When admitted, it was irregular, which was ascribed to the affection of her head from the injury; but it became regular after she was attacked with erysipelas; and it again became irregular when she recovered. The heat of the surface was also remarkable, rising as high as 105 F. The following Table will show the progress of the pulse and heat, which were accurately noted.

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[*] Leçons du Docteur Broussais sur les Phlegmasies Gastriques. Par E. De Caignou et A. Quemont, p. 256. 8vo. Paris, 1819.

May	15.	16.	17.		18.		19.		20.		21.		22.	
	m.	*m.*	*m.*	*v.*	*m.*	*v.*	*m.*	*v.*	*m.*	*v.*	*m.*	*v.*	*m.*	*v.*
P.	78	108	120	110	120	120	120	88?	116	130	126	120	124	132
H.							105	105	104½	104½	104	103½	104½	104½

May	23.		24.		25.		26.	27.
	m.	*v.*	*m.*	*v.*	*m.*	*v.*	*m.*	*m.*
P.	104	140	124	138	128	122	100	90
H.	100	101	102	100½			98	98

The effect of the anadoynes given on the morning of the 22d was remarkable; and afforded an additional instance to many I have already observed, of the good effects of the combination of anodynes and stimulants with the depletory practice. No particular effect was observed when the erysipelas spread in the course of its progress to the shoulders, between which a blister had been applied on the 19th; nor did the bite of the leeches applied on the 22d to the inflamed forehead, heal less kindly than usual. When the erysipelas affected both cheeks, the alabaster whiteness of the chin and upper lip, which it had not reached, was very striking. This appearance was afterwards observed in several other cases. As there were no obvious vesications in this case, it should be considered, according to Willan's Nosology, as a case of *Erythema marginatum.*

Case 3d occurred in a girl, a patient in the hospital for pleuritis, with some suspicion that the pericardium was affected, for which she had been bled to 30 oz., and leeches had been applied to the præcordia. On the evening after she was affected with erysipelas, a vein was opened, but only 14 oz. of blood got. This girl received much relief from the application of hot fomentations of vinegar and water to the part affected, which was the left mamma.

In Case 4th, the disease was also seated in the mammæ, first the left, and then the right. This girl, of a very full habit, had been a patient in the hospital from the 10th of June, having been seized with continued fever on the 5th. She was bled for the fever on the 10th to 30 oz., and on the 11th to 30 oz., and leeches were applied to the temples, and a blister to the sternum on the 13th. On the evening of the 18th, her erysipelas began. A vein was opened on the 19th, but only 12 oz. of buffy cupped blood were obtained: 30 oz. of the same appearance were drawn on the 21st, with imperfect relief. She received great benefit from cold lotions, and from suspending the mammæ, which in this case were enormously enlarged. The convalescence was very slow, and she suffered long after the erysipelas was terminated, from a kind of remittent fever, with colliquative sweating, which was at last checked by cinchona, but not until she was directed to remain out of bed as much as her strength would permit.

Case 5th was altogether slight. It occurred in the left temple, and was cured by cold lotions, without any detraction of blood.

Case 6th began around the left ear, in a woman of 54, in the greatest state of exhaustion from chronic diarrhœa. The disease was extensively erratic, but was easily borne. She was not bled, but got a little port wine, and had cold lotions.

Case 7th occurred in the right leg, in a woman in whom a similar attack, two years before, had left an affection greatly resembling *elephantiasis*, or *œdema durius*. The present attack commenced on the 25th. She was bled to 26 oz. on the 26th, which produced fainting, but greatly relieved her; and again, in consequence of a fresh attack, to 28 oz. on the 29th, with complete relief.

Case 8th was admitted affected with the disease. The case was chiefly remarkable on account of the age of the patient, who was in her 80th year. She was attacked on the 24th, and bled to 8 oz. on the 27th, with very great relief; and her convalescence was rapid.

Case 9th was a patient in the Hospital on account of an ulcerated throat, of a doubtful nature, whether syphilitic, sibbens, or scrophulous. The ulcers in his throat were touched with *mel æruginis*; and he got nitric acid, and a very little mercury. On the 9th of July the left *ala nasi* was inflamed, for which he applied a leech with relief. On the 12th, the right was similarly affected, and he again applied a leech. During the night of the 13th, he was accidentally much agitated, and exposed to cold, and was seized with tremors, headach, and pyrexia, with pain and swelling of the right salivary glands, and increased flow of saliva. On the 15th he was bled to 20 oz.; on the 18th to 30 oz.; and again, the same evening, to 24 oz. On the 20th to 28; and he was soon after convalescent; and on examining his throat, the original ulceration was almost healed; but, as he recovered strength, it again spread, and became deeper.

Case 10th was admitted as affected with general fever, which had commenced four days before. On the 13th July he awoke with acute pain of the right cheek; and, at the visit, it was observed affected with a tumefaction of a dark red colour, with a blueish or pale livid centre. He was bled to 20 oz., without any obvious benefit. I now thought to make a trial of the Italian method of Rasori and Tommassini, of treating inflammatory affections by contro-stimuli, and prescribed tartar emetic in frequent doses, dissolved in very little water, and desired the patient to refrain from drinking. Given in this way, tartar emetic, and some other powerful agents, are said to act as direct sedatives in inflammatory diseases, without producing the effects they usually evince when inflammation is not present. I persisted in this treatment till the 18th, when, in consequence of the disease continuing severe, and the ample experience I had had of the good effects of large venesection, I resolved to delay it no longer; and he was bled to 20 oz., and again the same evening to 20 oz. more, which seemed to have the effect of putting a stop to the progress of the disease; and his convalescence was good.

These cases, I think, sufficiently prove, that there is nothing in the nature of erysipelas essentially different from other inflammations. In ten cases occurring in immediate succession, the antiphlogistic treatment generally was employed with decided advantage. Two or three cases only were not bled, because they were so slight as not to require it; and wine was given to one patient only, in a state of extreme exhaustion from chronic disease. It cannot be said that these cases were all of that variety called phlegmonoid, which has always been considered to require some depletion; for, in their external appearance, they presented every variety of form; and they occurred in patients of both sexes, at different ages, and in opposite states of previous health; and, as I have repeatedly said, they were not selected as suited to the treatment employed, but were all that occurred. I am aware that something may have been owing to the constitution of the season or year, as all diseases are now considered to partake more of a phlogistic diathesis than formerly. But I cannot avoid coinciding with Prof. Hufeland, that the alleged periodical change in the character of diseases, depends as much upon fashion in medical opinion, as upon real difference in their nature. Sure am I, that the continued fever which we now treat antiphlogistically, is the very same that, thirty years ago, was treated with the most powerful stimuli.

It may also be alleged, that although erysipelas may bear and require the antiphlogistic treatment in Edinburgh and the country generally, that in London the same practice would prove injurious. But I am not aware that the opinion so generally entertained, that there is something in the air of the capital which renders the depleting practice less applicable to its diseases, is supported by sound observation. The same change in the treatment of continued fever has taken place in the metropolis as in the country; and there is no proof that erysipelas and all other diseases are not the same in both.

Edinburgh, 20*th August*, 1821.

IX.

Case of Malformation with Ascites in a Fœtus. By John Windsor, F. L. S., Member Royal College of Surgeons of London, and one of the Surgeons to the Manchester Eye Institution.

The following is a case of Ascites occurring in a fœtus, which formed an abdominal tumour so large as to prevent delivery without instrumental aid; and, being conjoined with a malformation of the abdominal and pelvic viscera, appears somewhat interesting, both in a practical and an anatomical point of view.

On the 6th of the 9th month, 1816, I was requested, about half past one in the afternoon, to visit the wife of Thomas

Higham, of Shude-hill, in this town, a woman of about 24 years of age, and in her first pregnancy, on account of some difficulty in her labour. On my arrival I learned, from an experienced midwife who had been with her during the day, that the pains had commenced the preceding evening, and that the membranes had broken early in the morning, before she was called in. She found the os internum very little dilated, and the dilatation proceeded very slowly; the face presented itself, with the umbilical cord also protruding. By about noon the head became expelled, after great labour, without the os externum; but, after this time, the uterine action ceased, and every attempt of the midwife to accomplish the delivery proved unavailing.

In this state she was lying when I was called in. I found her pulse nearly of the natural frequency and strength; and she did not appear to be materially exhausted by the duration or severity of her labour. During the period of her utero-gestation, she had enjoyed a pretty good state of health, excepting some inconvenience which she sustained, especially during the advanced part of the term, from a sensation of remarkable heaviness in the abdomen, accompanied with some œdematous affection of the lower extremities. The cause of both these symptoms may doubtless be referred principally to the pressure made on the surrounding parts by the morbidly enlarged fœtal abdomen.

Had there been no preternatural obstruction, it seemed unaccountable how, the head being born, the delivery should have been so long protracted, especially as the midwife had made repeated though fruitless efforts to effect it.

Hence I was led to believe that there must be some malformation or morbid alteration of parts producing the difficulty; and, on applying my hand to the patient's belly, I found the abdominal tumour extremely large, though the child's head was born, and the waters had been long off.

Having placed the patient on her left side in bed, I proceeded to draw gently, though perseveringly, by the head; but the attachment of the cervical vertebræ, previously weakened by the midwife's attempts, now entirely gave way. I then passed a crotchet within the ribs, to assist the extraction; but this also failing, I carefully pushed in the perforator, in order that I might be the better enabled to embowel the fœtus. As soon as the instrument penetrated the diaphragm, there issued an immense gush of fluid, overflowing the bed, and passing through the floor into the room below. The exact quantity of it could not be measured, but probably it might be about ten or twelve pints. After this the uterine action, which had been so long dormant, as if conscious of inability, was immediately renewed, and the fœtus, a female child, with the placenta, were expelled. The abdominal parietes of the child now presented themselves, from their previous distention, as a very large, somewhat pendulous, and almost empty bag. I exposed the cavity of the abdomen, and found about two pints of a serous fluid still remaining.

Observing also, at the same time, that there was a deviation from the ordinary structure of the parts, I requested to have the child sent home to me, that I might make a more minute examination of it at my leisure, which I had an opportunity of doing the next morning; and the following is an account of it. The urinary bladder was found attached, throughout its whole length, to the abdominal parietes, the attachment extending for the space of six inches, and as far as the umbilicus. The distance between the umbilicus and pubes appeared greater than is common, owing probably to the previously distended state of the abdomen. At the sides of the opening of the ureters into the bladder, this viscus sent off two culs-de-sac, each of which would admit the end of the little finger, as far as the first joint. Between the mucous and muscular coats of the bladder, at the posterior part, there was a deposite of an earthy matter for the extent of two or three inches. The muscular coat, in this part, appeared unusually thin; and, in one spot, which was circumscribed, it seemed altogether wanting.

The internal coat of the bladder was in some parts full, in others of a vermilion red. The small intestines formed a convoluted adherent mass, so that the different portions were with some difficulty separated.

The ileum terminated as usual by a valvular opening in the cæcum, which had its natural appendix. The colon, instead of making its ordinary turns, extended, in a nearly straight course, down the spine. At first sight, it seemed imperforable; but, on minute examination, a small canal, that would scarcely admit a blowpipe, was observed passing off from it. This small canal measured about one inch and a quarter in length, and passed into a bag or sac, a kind of rectum, which was double the diameter of the colon, and large enough to admit a hen's egg, and contracted a little in two parts, so as to divide it into three partial compartments.

The colon measured 9½ inches in length; its diameter equal only to that of the small intestines, but larger about its end, probably from the accumulation of the contents at this part, previous to their passing through the small canal. The small intestines, the colon, and the above mentioned sac or rectum, were all filled with a substance of a whitish colour, with a slight tinge of green, and of the consistence of thick honey. At the umbilicus, the abdominal parietes, excepting the peritoneum, were for some space deficient. One umbilical artery only, but that a large one, was observed. Close by the opening of the canal, from the colon into the sac or rectum, another small passage was found passing off from the sac, which would only admit a crow's quill, was about half an inch in length, and ended in the bladder, near to where the urine passed off. The only exit therefore for the feces which nature had furnished in this singular malformation, was by the urinary bladder. There was no anus; no uterus or internal organs of generation were found; and, indeed, the above mentioned pouch or rectum was close to the posterior part of the bladder. The external organs of generation seemed natural. The liver was of a remarkably soft and pulpy structure; the spleen much firmer; the pancreas also of a firm texture. In the viscera of the thorax, nothing remarkable was observed. The fœtus was full-grown; and did not seem to have been dead long, as the cuticle remained entire. The sanguiferous and nervous systems were not, from want of time, particularly examined. The mother recovered well, and has since born two well-formed children.

Manchester, 5th Mo. 29th, 1821.

X.

Case of Amaurosis of the Left Eye, cured in consequence of an Accidental Stroke upon the Cheek, under the Right Eye. By WILLIAM HENDERSON, M. D.

I AM induced to publish the following case, both on account of its singularity, and also on account of its tendency to elucidate the physiology of the human eye.

Edward Syme, while a labourer at Feversham Powder-mills, upwards of twenty years ago, received an injury in his eyes in consequence of the mills having exploded, but from which he soon recovered. Some years after, he enlisted as a private in the Fifeshire Militia; and, while on duty with his regiment at Yarmouth in 1805, some French prisoners, in attempting to escape, blew up a magazine; from which accident he received so severe an injury in his eyes, as to occasion his discharge shortly after as unfit for service, by reason of cataract in each eye. From that period, vision in the right eye, though considerable, was imperfect; but the left was totally insensible to light, although the cataract had been long completely absorbed, in consequence of its having been broken down, and pushed into the anterior chamber of the eye; which operation he had undergone some years ago. He was in this state when, in 1817, an order was issued by the Secretary at War for all out-pensioners of Chelsea, who had any impediment in their eyes, to repair to certain quarters for inspection by Medical Officers, who had been ordered to attend them at these places. Syme was ordered to put himself under the care of Sir W. Adams, who, on the 24th December 1817, operated on his right eye. A high degree of inflammation followed the operation, which was not successful, but which was repeated on the 22d February 1818. Shortly after the second operation, sight was restored. He was discharged on the 26th March following, with vision a little more distinct than when he went into the hospital.

On the first of April 1818, while coming out of the passage-boat at Kirkaldy, on his way home, he fell, and struck his head against a stone immediately under the right eye. The pain from the stroke was violent for a little, but soon went off. He continued his journey the following day, having felt but little uneasiness from the fall, and arrived at Perth about 8 o'clock, *p. m.*; and, while sitting talking to his wife, betwixt 9 and 10 o'clock the same evening, his sight almost instantly left him. Loss of sight was followed by excruciating pain in the eye.

When I first saw him two days after, the right eye was dreadfully inflamed; there was also a considerable degree of inflammation in the left eye. I immediately opened a branch of the right temporal artery, and bled him *ad deliquium*; then ordered a poultice of crumbs of bread and cold water to be applied over both eyes; low diet; and, as his bowels were rather slow, to take ʒss. of pulv. jalap. comp. every two hours until they were freely moved.

5th.—Had a tolerable night; pain in his head and eyes nearly gone. Bowels have been freely opened. Continue the poultice, and keep the room dark.

6th.—Had a good night; no pain in head or eyes. Continue the poultice.

7th.—Slept a little during the first part of the night, but awoke with severe pain in the right eye and forehead. Eyes much inflamed. I now opened a branch of the left temporal artery, and bled him again *ad deliquium*. Continue the poultice.

8th.—Slept well; no pain anywhere, but complains of lightness and giddiness in his head. Continue the poultice.

9th.—Had a good night, and goes on well.

10th.—Complains that his right eye feels tight, and a little sore. Ordered six leeches to be applied on the temple near the eye.

11th.—Found him quite happy, calling out "I have got my sight! I have got the sight of my left eye!" he having observed the different colours of the bed-curtains this morning when the poultice was removed. Complains of no pain anywhere. The florid red colour of the eyes, occasioned by the turgescence of the blood-vessels, has now changed to that of a faint brick colour. As the inflammation abated, vision in the left eye became stronger and more distinct; and, by the 15th, he was able to read with the aid of a double convex lens. The right eye shows no disorganization, but it is considerably enlarged, and still remains totally insensible to the strongest light. Vision in the left eye is much stronger, and more distinct than that which he enjoyed previously in the right eye.

Upwards of three years have now elapsed since the above-mentioned accident happened; and both eyes remain in the same state that I have already described.

I think there can be no doubt that the stimulus arising from the stroke, and subsequent inflammation, was the cause of sensation being restored to the retina and optic nerve of the left eye; while the violent inflammation in the right eye subsequent to the stroke, and consequent enlargement, may in some measure account for the loss of vision that followed.

When the ordinary applications of electricity and galvanism have failed in cases of amaurosis, might not the history of this case warrant a trial of the same remedies in a more powerful manner than has hitherto been had recourse to, in cases of loss of sight arising from a paralytic affection of the retina and optic nerve?

Rose Terrace, Perth,
June 30, 1821.

XI.

Cases of Inflammation of the Pericardium; with Remarks on the Adhesion of Serous Membranes. By R. Knox, M. D., Member of the Wernerian Natural History Society.

Case I.—M., aged 31. 15th.—Complains of severe and constant dyspnœa, with great oppression in the chest; cough; copious, bloody, and purulent expectoration; also frequent vomiting of a very bitter and greenish-coloured substance. There is constant soreness in the site of the stomach and liver, but no acute pains. Sometimes, however, pains are felt at the top of the right shoulder. A slight hardness, and some tumefaction, may be felt in the epigastrium and the hypochondriac region. The emaciation and debility are considerable; countenance of a yellowish tinge; pulse quick, but irregular; great thirst; tongue yellow; no stool for some days. The present attack commenced about three weeks ago, with aggravated dyspepsia, cough, and the spitting of blood; as also with vomiting and severe headach.—Says that he has frequently had strong palpitations of the heart; was recently blistered, and has been taking acid and cough mixtures. (Had some castor oil and Tr. sennæ.—Milk diet. He next took pills of calomel and colocynth. to the extent of nine grains of the former, and twenty-four of the latter; and, finally, at 6 P. M., a purgative enema; effervescing draughts, and abdomen fomented.)

16th.—Physic operated, but not until he had received the injection, when two scanty and scybalous stools were procured. The vomiting continues as severe as yesterday, and he has spit a considerable quantity of blood and purulent matter. Pulse quick, but of natural strength; says that opium has never agreed with him. (Cont. pil. coloc. et calomel. Repet. enema si opus sit. Utat. potu ex potass. supertart. et Habeat h. s. extr. hyocyam. gr. iv.—Hora 6 P. M. Applic. episp. part. abdom. dolenti.)

17th.—The enema operated, and two scanty stools were procured. Spitting of blood much diminished, as also the vomiting; rested well during the night; says there is no pain in any part of his body, but that he feels as if a fluid moved through his lungs. (Cont. medic. ut heri.)

18th.—Had four stools, the last of which were not scybalous; some vomiting in the morning; expectoration of blood continues; feels pains in the right side; strength much failed, and the pulse is weak and small. (Cont. omnia ut heri, et hab. quoque lac ammoniac.)

19th.—Has very little vomiting or spitting of blood; is inclined to be costive; pulse pretty natural; blister discharges considerably; takes no food. (Repet. omnia.)

20th.—Has often a gulping of bilious matter from the stomach; but there is now very little spitting of blood, and no pains. General symptoms somewhat alleviated. (Cont. omnia.)

21st.—Great oppression and burning pain in the chest; bloody and purulent expectoration nearly ceased; little cough; is extremely weak; pulse irregular, slow: Had four stools.

22d.—Complains of soreness all over his body; all symptoms ceased; much stifling in the chest; died in the night. He took wine to the amount of several ounces during the last days of his illness.

Sectio Cadaveris.—*Thorax.*—The cavities of the *pleuræ* contained about 2¼ pints serosity, the right more than the left; slight adhesions in the right side anteriorly. The lungs contained a considerable quantity of mucosity. On opening the pericardium, the entire serous surface was covered with a layer of coagulable lymph, and long slender adhesions united it to the heart: the part of it investing the heart itself was studded with small prominent bodies, giving to the finger a sensation as if drawn over sandpaper. The serosity contained was not great. The heart itself was larger than usual; and the left ventricle possessed a thickness of substance which might be called morbid. In the cavity of the abdomen, the liver was found to be of a large size; but nothing very remarkable was observed in any of the other viscera.

CASE II.—D., aged 36. 14th.—Came into the hospital with intermittent fever, of which he has had a paroxysm every third day, about 6 P. M., of six hours duration. States that he has been eight years in the West Indies, where he had frequent attacks of intermittent. His present sickness is of eight days duration, attended by a constant nausea at stomach and vomiting of bile. Feels at present no pain in any part of his body. Pulse 80; tongue clean; appetite bad; belly regular. (℞ Hyd. submuriat. gr. x.—Milk diet.)

15th.—Complains of a pain at the margin of the false ribs in the right side, which he says produces a constant inclination to cough. Sickness at stomach not near so oppressive; bowels freely evacuated. Pulse 80; skin warm and dry; tongue furred; stomach and bowels easy. (Applic. epispas. parti dolenti et Capt. mist. cinch. ℥ss. ter in die et pil. hyd. submuriat. et opii āā gr. j. mane et nocte.)

17th & 18th.—Pain of right side nearly gone; cough still troublesome; sickness at stomach not so oppressive; bowels freely open. Slept little during the night. Pulse 80, and weak; tongue clean and moist. (Cont. medic. ut antea.)

20th.—Pain of right side has returned, which impedes respiration, and produces a short teasing cough; feels considerable pain on making a deep inspiration. His strength is a good deal reduced, and he has a sallow complexion. Nausea at stomach continues, with occasional vomiting of bile. Pulse 96; skin hot and dry; tongue foul; feels no inclination for food. (Cont. medic. et appl. epispas. part. dolenti.)

22d.—Is upon the whole worse. Cough and difficult respiration not alleviated. He is at times very restless, and complains much of the pain in his right side; has constant sickness at stomach, but he seldom vomits. Pulse 120 last night; at present 86, and very weak; skin cool and moist; tongue clean; bowels costive. (Omitt. cinchona et capt. hydr. submur. gr. v. 3tia quaque hora donec responderit alvus, et utatur pro potu mist. acidi nitrici.—Milk diet.)

24th.—Cough and oppressed breathing increased; complains very little of the pain in his side, or sickness at stomach. The upper and lower extremities at times cold, and the pulsations at the wrist scarcely perceptible; was very much purged by the calomel. (℞ Decoct. cinch. ℔ j. Tr. zingib. & Tr. cinch. āā ℥ j. Capt. ℥ j. secunda quaque hora. Milk diet. Beer 1½ pint, wine 8 oz., sugar 1 oz.)

25th.—Cough and difficult breathing relieved; feels considerable uneasiness when he attempts to expectorate. Pulse fuller and more regular; tongue clean and moist. His hands and lower extremities possess natural warmth; stomach easy; pain of right side still perceivable; bowels very open. (Cont. medic. Beer 2 pints, milk 1 pint.)

26th.—Breathing contracted; has a short cough, with difficult expectoration, as at last Report. A full inspiration produces cough and pain in his side. Skin warm and moist; pulse 80, and regular; tongue clean; bowels very open. *Vespere.*—Respiration much oppressed and quickened; cough continues, but is unable to expectorate. When he lies for a short time on his back or on either side, he is obliged to be raised up in bed, owing to a sensation of immediate suffocation. Pulse feeble and intermittent; extremities cold; much anxiety felt at the pit of the stomach, and indicated in the countenance.

27th.—Died at 1 A. M.

N. B.—I saw this patient on the 23d, 24th, 25th, 26th, and his state was as follows.—He had a small, very quick, sharp, regular pulse; lay constantly on his back; tongue perfectly black, and much furred; he greatly resembled a man labouring under typhus fever.

Sectio Cadaveris.—External appearance presented nothing remarkable. Thorax.—Strong adhesions were found in the right lobe of the lungs; and a considerable collection of purulent matter, mixed with coagulable lymph, in the pleura of the same side. This pleura exhibited marks of inflammation, extending even to the diaphragmatic pleura. On cutting into the right lobe, its internal structure appeared altered by inflammation; and purulent matter could be pressed from the bronchial cells. This appearance existed only in the lower lobe of the right lung. Left lung sound. On opening the pericardium, it was found to contain at least a pint of purulent and serous fluid, in which floated large masses of coagulable lymph, which also contained some pus. The serous part of the membrane lining the pericardium, properly so called, was covered with a thick layer of coagulable lymph; and that immediately covering the heart, presented an appearance precisely similar to that found in the preceding case. Heart large, but otherwise sound. *Abdomen*, spleen very much enlarged. Ulcerations observed in the rectum.

The subject of Pericarditis, and Inflammation of the Heart, has successively occupied the attention of many distinguished observers, amongst whom may be mentioned Morgagni, Corvisart, Laennec, and Duncan; nor did it escape the acute mind of that illustrious man to whom medicine owes much, and surgery every thing. The habit of very carefully examining, after death, the bodies of those who have died of disease, and of comparing these examinations, made under a variety of circumstances, with the observations of others, has led me to form opinions relative to pericarditis, which, if not peculiar, yet seem to differ considerably from those already before the public. I entertain hopes, that benefit may be derived to practical medicine from the investigation of these opinions, though ultimately they should not all be confirmed; and with this view submit them to the public. *1st*, The difficulty in the diagnostic of pericarditis is allowed to be great; yet perhaps, with care, the disease, for the most part, might be detected at its commencement. In the cases I have witnessed, amounting to five, vomiting was universally present, and the patient could not lie with ease on his back. These symptoms have been observed by so many others, that I should deem the concomitancy of vomiting, with symptoms of inflammation within the cavity of the chest, as a decisive indication of the nature of the case. The most dangerous error which can be committed is the confounding pericarditis with typhus fever or hepatitis. The treatment by such stimulants as wine and opium hurries the patient rapidly to an untimely grave; whilst the extreme abuse of calomel in hepatic cases, proves no less destructive when the disease is mistaken for hepatitis. Should the disease be mistaken for pleuritis, as indeed they are often combined, the patient's chance of recovery would necessarily be diminished; for no one would venture to employ depleting measures to that extent, which a knowledge of the presence of pericarditis would warrant. I differ, therefore, from the learned author of the article "*Pericardite*," in the "Dictionaire des Sciences Medicales," who seems to consider it of little import though the disease be mistaken for pleuritis, as the treatment would necessarily be similar in either case. But every British practitioner, I imagine, would, on ascertaining the existence of so very alarming a disease as inflammation of the pericardium, adopt measures much more active than those generally resorted to in a common pleuritic case: He would carry venesection to the utmost possible extent; and would employ large vesicatories, which, from the vicinity of the organ affected to the surface, would materially contribute in arresting the progress of the disease. *

2d, A very careful inquiry into the nature of pericarditis has disposed me to adopt the opinion, that no one ever survived, for any length of time, an inflammation of the pericardium, whether acute, subacute, or chronic. As this opinion is in direct opposition to that of some very distinguished authors, I shall here briefly endeavour to show the grounds on which the conclusion has been adopted. The only proof hitherto offered, so far as I know, of a person having survived the effects of an inflamed pericardium, are drawn from the appearances of adhesion of this membrane to the surface of the heart, which have presented themselves when no previous symptom led to the belief that the person had laboured under any disease of that organ for at least a great number of years. But many cases are on record, in which the pericardium was found adhering to the surface of the heart, though, during no period of the patient's life, was he known to have been afflicted with disease of any organ contained within the cavity of the thorax. I find amongst my notes two such cases, in which, after the very sudden death of the patient, who had previously for many years enjoyed perfect health, no morbid appearance was found excepting the adhesion of the pericardium to the heart. It is also somewhat remarkable, that in neither of these cases had the patient ever been known to be affected with any disease referable to the chest. We shall presently consider the connexion between the morbid appearance found, and their sudden death. A few cases might be quoted from Morgagni, and other equally respectable authors, confirmatory of this pathological fact; and a distinguished modern anatomist and pathologist (Laennec) allows, that he has repeatedly met with such cases. "Il a ouvert un grand nombre de sujets qui ne s'etaient jamais plaints d'aucun trouble dans la respiration ou la circulation; ou qui n'avaient presente aucun signe semblable dans leur maladie mortelle, quoiqu'il y eut adherence intime et totale des poumons et du cœur." It would seem, then, that the adhesions observed between the serous surfaces of the pericardium are of very different natures; that in the first, where coagulable lymph is effused, inflammation more or less acute is present; purulent matter generally appears, and the disease is necessarily fatal. On the other hand, the pericardium, without any alteration of structure, occasionally adheres to the heart by a short cellular texture, and without any accompanying or preceding inflammation, as we often find takes place in the pleura. The patient suffers little or no inconvenience, *but is apt to die suddenly at a period more or less remote.* This is an important fact, hitherto unobserved, so far as I know; and whether satisfactorily proved or not, merits the attention of the pathological anatomist.

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* For a very instructive case of pericarditis, mistaken for rheumatism, see [illegible] Surgical Works. The patient was the celebrated Mirabeau.

It is well known that, in the phlegmasiæ of serous membranes, the formation of adhesions generally succeeds in arresting the farther progress of the disease, and gives to the patient an additional chance of recovery. The forming of adhesions between the serous surfaces of the heart would be accompanied with the same beneficial effects as in the phlegmasiæ of other serous membranes, were it not for the nature of the organ which it protects, its perpetual activity, and for the circumstance of its being the very source of life. In cases of pericarditis, even previous to the formation of adhesions, the disease has already committed ravages on the constitution, has destroyed the delicacy of the membrane, and altered its natural texture. It then becomes much thickened, dense, and inelastic; its smooth internal surface is altered; considerable masses of coagulable lymph have been deposited, existing either loose in the cavity, or forming the bond of union betwixt the diseased surfaces of the pericardium. All analogy points out that we must not strictly apply the pathology of other organs to the heart; and we have seen, in the distressing case of M., that the disease will destroy the strongest frame, though purulent matter be not effused into the cavity of the pericardium, and the otherwise favourable circumstance of adhesions have taken place, without averting, or in the smallest degree delaying, the period of the fatal catastrophe. 3*d*, Were we in possession of all the details relative to those cases where the pericardium has been found adhering to the surface of the heart, in persons who, during life, had never complained of any pectoral disease, we should probably find that such adhesions as those I allude to, which are neither accompanied by, nor preceded by, inflammation of this membrane, are, from the nature of the organs whose function they interfere with, attended by the sudden death of the patient. This would seem to be confirmed by two cases met with in Morgagni (Ep. 5–19. & Ep. 8–6.); and probably patient research into the *fasti* of medicine might produce evidence sufficient to establish this opinion, which I must consider as one of considerable importance with a reference to *legal medicine.*

I shall conclude these brief remarks by summing up, in a condensed form, results drawn from numerous dissections of diseased bodies, altogether independent of medical theory or hypothesis; their refutation or confirmation, by an appeal to the same source of knowledge, will afford me equal pleasure. 1*mo*, Hitherto inflammation of the pericardium has been almost uniformly mistaken for that of some other organ, or, unhappily, for some other disease of a totally different nature; hence those enjoying extensive practice, either in private life or public hospitals, should direct their particular attention towards investigating this disease. 2*do*, Inflammation of the pericardium, which has advanced so far as to form adhesions betwixt its surfaces, or to pour out coagulable lymph or purulent matter into its cavity, is uniformly and necessarily fatal. 3*tio*, Adhesions which, on other inflamed serous surfaces, limit the progress of the inflammation, and rescue the patient from immediate death, are of temporary benefit only in cases of inflamed pericardium, and do not ultimately save the individual. 4*to*, Adhesions are formed between the serous surfaces of the pleura, pericardium and peritoneum, without inflammation, and without the previous effusion of coagulable lymph.[*] When an adhesion of this nature unites the serous surfaces of the pericardium, it is very extensive, most commonly uniting the entire surfaces. To suppose that this was formed by the agency of any inflammatory process, involves the further supposition that a patient could possibly survive such an inflammation, and that it might have run its course without the production of any very obvious symptoms in the sufferer; suppositions which no pathologist would venture seriously to defend. *5to,* These adhesions, when they affect the pleura and peritoneum, are of little consequence unless very extensive; but, when they regard the pericardium, they must necessarily affect the motion of the heart, and seem to be productive of sudden death (without any preceding illness), at a period sometimes very remote from the time of their formation.

NOTE BY THE EDITOR.

ALTHOUGH not the custom of the Editor to make any comments upon the communications of his correspondents, by which the reputation of this Journal is mainly supported, he cannot refrain from adding a few remarks to Dr Knox's valuable paper.

1. He thinks he has seen at least one case of decided pericarditis treated successfully; and cannot yet subscribe to Dr K.'s opinion, that the advanced disease is *uniformly and necessarily fatal.*

2. He has also seen cases of universal and uniform adhesion by very short cellular membrane, when no symptoms of *pericarditis* had ever been observed. One of these cases lately terminated unexpectedly in death, though preceded for a few days by palpitation and irregular action of the heart; and, on examination, besides the uniform adhesion of the pericardium, great part of the pleura of the right side was converted into bone and cartilage, at least half an inch thick, although no suspicion of any disease of the organs of respiration had been entertained.

3. Dr K.'s idea of the possibility of adhesion without preceding inflammation, appears to receive support from a case of death from debility after continued fever, when, on opening the thorax, the pericardium seemed wanting; it was so transparent, and adhered so closely, from the total defect of serum: But the whole serous membranes of the thorax and abdomen were equally dry and diaphanous.

A. D. Jun.

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[*] It is not improbable that, at some future period, a connexion may be traced between such cases and those in which the surfaces of the pericardium have been found totally destitute of moisture.

PART II.

CRITICAL ANALYSIS.

I.

1. *Experiences sur la Digestion dans l'Homme presentées à la Premiere Classe de l'Institut de France, le 8 Septembre* 1812. Par A. Jenin de Montegre, Médecin de la Faculté de Paris, Rédacteur-Général de la Gazette de Santé; suivies du Rapport des Commissaires nommés par l'Institut. pp. 55. Paris, 1814.
2. *General Views relating to the Stomach, its Fabric and Functions.* By T. C. Speer, M. D. Physician in Bath. 8vo. London, 1818.
3. *A Treatise on Indigestion and its Consequences, called Nervous and Bilious Complaints, with Observations on the Organic Diseases in which they sometimes terminate.* By A. P. Wilson Philip, M.D. F. R. S. Ed. &c. 8vo. pp. . London, 1821.
4. *Observations on Derangements of the Digestive Organs, and some Views of their Connexion with Local Complaints.* By William Law, Fellow of the Royal College of Surgeons of Edinburgh. Edinburgh, 1821. 8vo. pp. 156.
5. *Peptic Precepts; pointing out agreeable and effectual Methods to prevent and relieve Indigestion, and to regulate and invigorate the Action of the Stomach and Bowels.* By the Author of the Cook's Oracle. 12mo. pp. 48. London, 1821.

It is not easy to define the function of digestion; nor is it easy to point out the circumstances from which a definition may be formed. Physiological writers have attempted it in different modes, sometimes from a wish to be novel, sometimes from experiencing the difficulty of assenting to the definitions of previous authors, or from the consciousness that all these definitions were imperfect. If we form a definition from the intention of the function, or its immediate object in the economy, we may say with Magendie, that it is that process by which the chyle is prepared. This, however, presupposes an acquaintance with the chyle, the knowledge of which naturally follows that of the digestive actions.

If, on the other hand, we define this function from the organs in which it chiefly takes place, we may say that digestion consists in that series of actions which take place either simultaneously, or successively, in the course of the alimentary canal. This is indeed an application of the term considerably different from that which was originally intended; for it was assuredly employed to signify merely the action of the stomach in particular; but recent writers of eminence have departed from this; and, at least in the use of the term *digestive organs*, they authorize the extension of it which we adopt. We are not willing to provoke or to merit the charge of innovation, otherwise we should propose, that, to obviate this very natural objection, the term digestion should still be restricted to the changes which take place in the stomach, while the assemblage of processes which take place in the entire canal, is designated by the term *Alimentation.*

Viewing it in this light, therefore, digestion, or rather alimentation, may be considered as capable of being resolved into several simple processes, which have been known to physiological writers by various names:—We exhibit the following Synoptical Table of these individual processes, of their nature, and of the parts in which they are principally performed.

	Processes.	*Nature.*	*Seat.*
Alimentation comprises seven successive actions.	1. Mastication, -	Mechanical division, -	Mouth.
	2. Insalivation, -	Mechanical mixture, -	Mouth.
	3. Deglutition, -	Mechanical conveyance,	Phar. & Œsophagus.
	4. Digestion, - -	Chymification, chemical change? assimilation,	Stomach.
	5. Encholosis, or Biliation, -	Chylification, Peculiar mixture and separation,	Duodenum.
	6. Action of small intest.	Absorption & transportation,	Ileum.
	7. Action of large intest.	Transportation & expulsion,	Colon.

The first two of these processes are abundantly simple, and never seem to have attracted much attention; mere mechanical division where it was requisite, and mixture with a quantity of salivary and mucous fluid, constituted the entire change which the food underwent in the mouth and œsophagus. In the third action, it was presumed to be merely conveyed from the mouth to the stomach; so that it entered the one cavity in the state in which it left the former. So far the process was obvious enough; and it would have been a waste of time and thought to reflect much on what was so palpable. But when the food reached the stomach, and was securely deposited in that viscus, what then became of it? It must have been observed, even at a remote period, in occasional vomiting occurring on the human subject, and in the stomachs of animals which were slain at the altars of the divinities, that the contents of that organ were no longer in the same state in which they had been transmitted from the mouth;—what change, therefore, had taken place, and by what means had it been effected? This was the difficulty which perplexed their ingenuity, excited their imagination, and gave birth to numerous fancy-works, each excelling the other in extravagance. Every tyro in the history of medicine knows the whole of those ingenious means by which the different sects who flourished at various periods, convinced themselves and the world at large of the mode in which man digested his food. The days are now past, when it was requisite to occupy the time of the student in telling him that some ancient philosophers, as Empedocles, Plistonicus, Dionysius Ægeus, &c. &c., said that the food underwent putrefaction in the stomach; that Hippocrates attributed digestion to coction effected by an elevated temperature; and that Galen endowed the stomach with attractive, retentive, concocting and expelling properties, in order to explain the mysteries of the process. This last doctrine maintained a sovereign influence in the schools till the middle of the 17th century, when Stahl and his followers, whose propensities and tastes were principally chemical, and whose antipathy to every thing Galenical seems to have known no bounds, recognised in the saliva a property of fermentation; and they forthwith established a sort of effervescence in the noble organ. In what light this insufferable innovation was viewed, history is silent; but the theory was destined to enjoy but a short-lived reputation. The success of Sir Isaac Newton, and such men as Gregory, Keil, Halley and Huygens, in explaining the phenomena of the material world on geometrical and mechanical principles, tempted the physiologists of the day to introduce them into the animal economy, and revive the opinion of Erasistratus. The stomach was then fancied to be a contractile engine, which was unceasingly triturating the aliment, and, by comminution, rendering it suitable for nourishing the individual. Nothing can be more truly tiresome than the history of these irrational opinions; and we shall not anticipate the reader's ingenuity in refuting them. It is sufficient for us to say, that, about the middle of the last century,[†]

[†] Memoires de l'Academie des Sciences, anno 1752, pp. 418—457, 12mo; pp. 282—308, 4to.

M. de Reaumur showed, in a most satisfactory manner, that this system, which had then the firmest hold of the minds of men, was perfectly inconsistent with the powers of the stomach in the majority of animals; and completely proved, that the changes which the food undergoes in the stomach, must be accomplished by some fluid agent which acted in the manner of a solvent. It was impossible to obtain any direct evidence from the inspection of the process in the human subject; but, by giving alimentary substances, enclosed in open tin tubes, and perforated balls of metal, to birds of various kinds, to dogs, and to sheep, M. de Reaumur ascertained, 1*st*, that trituration, which takes place in birds possessed of the gizzard only, corresponds to the mechanical division of the food by the teeth in man and all other animals; 2*d*, that it has no part in the process of digestion in the human stomach, for the usual changes took place in situations where mechanical force of this kind could not operate; and, 3*d*, that digestion was accomplished certainly in birds of prey, dogs, &c., and probably in man, by the action of a fluid similar to a solvent. He further attempted to obtain some of this fluid by means of sponges; and he showed that, even out of the body, it could effect on alimentary substances changes analogous to those which took place in the cavity of the stomach. [*] These experiments, which were known by the name of artifical digestions, had a powerful influence in altering the physiological doctrine of digestion. The existence of a fluid, to which the name of gastric juice, or liquor, was given, was generally admitted among medical men; and, as solution was known to be accomplished in general by something acid or alkaline, strong hopes were entertained that it must belong, in chemical characters, to one or other of these classes. Numerous investigations were instituted, but the discordant results which have been obtained, prevent us, even in the present day, from going to either side.

An important step however had been made; error had certainly been refuted, and this we know is the first advance to wisdom; a glance at the truth had been obtained. Matters were in this state for about ten or twelve years, when a distinguished physiological genius appeared in England. Mr John Hunter, who, after a residence of three years in various places abroad in the surgical department of the army, returned to London in 1763, had, among many subjects of the animal economy to which he bent his active and original genius, been making observations and performing experiments on the changes which take place in the food in the stomach.* The results of these investigations had been limited to his own pupils, till an accidental occurrence induced him to lay them partially before the world. Mr Hunter had occasion to examine, in the presence of Sir John Pringle, one of the Baronet's patients, in whom he met with a partial solution of the stomach. Mr H. had some years before repeatedly observed, principally in the bodies of persons who had been slain by violent deaths, considerable dissolution, and, in some instances, complete destruction of the gastric coats, so as to allow the contents to escape into the cavity of the abdomen. He had therefore no difficulty in explaining this appearance to Sir John, to whom it was both new and unaccountable; and, at the request of the Baronet, he drew up a paper, which was published in the 62d Vol. Philos. Trans. in 1772, and in which he showed, that the solution or destruction in question was the effect, not of disease, but of the action of some powerful agent contained in the stomach itself; that it was, in truth, an actual digestion of the stomach, and depended on the circumstance of the part being suddenly deprived of its vital energy; while the fluid, whatever it were which had been previously secreted, was at liberty to act on it. He came in short to the conclusion, that there must be something secreted in the coats of the stomach, and poured into its cavity, which animalises or assimilates the alimentary substances to the nature of the blood.†

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[*] Memoires de l'Academie des Sciences, anno 1752, pp. 705—752, 12mo.; pp. 464—495, 4to.

The publication of these important facts and reasonings seems, by the account of Mr Hunter himself, to have given a decided impulse to the tastes and pursuits of physiologists. The second Doctor Monro, in whom a kindred spirit of investigation, as may be often remarked in the history of science, simultaneously appeared, had been employed very nearly at the same time (1764)‡ in performing experiments on animals with the same view; and although, like Mr Hunter's, the results had been confined almost to his pupils, yet, like the pursuits of distinguished men in general, they diffused around them a spirit of inquiry, which produced the most beneficial influence on the medical sciences. We may, indeed, justly consider the few experiments of Dr Monro, and his judicious reasonings, which could not have been derived from Mr H., as having given birth to the most complete and conclusive experimental investigation that ever was instituted with the view of elucidating any animal function. All the information hitherto collected had been procured from experiments on the lower animals, which could furnish at best analogical conclusions only; or was the result of accidental observations made on the human body after death; which, although they were presumptive, as far as they went, were not however of the description to satisfy a sceptical mind. No direct proof had been obtained of the agent by which food is digested in the human stomach, or the mode in which it operates; nor could we say that we had any more than mere analogical evidence for our belief, when an opportunity, literally unparalleled, of attaining this wished-for object occurred in Edinburgh, and of which Dr Edward Stevens, a zealous and diligent pupil of Dr Monro, failed not to avail himself. A miserable being of a Hussar, whose fatuity and poverty compelled him to earn a wretched pittance by the most abject compliance with the capricious curiosity of the mob, had begun, at the early age of seven, to swallow stones and other hard bodies; and having continued the practice during twenty years, what had originated in idle amusement, was now resorted to as a regular profession, to supply the necessities of life. At the time when Dr Stevens saw him, his stomach was so distended, apparently by the considerable weight to which it was repeatedly exposed, that he could swallow several stones at once, which were not only felt in the stomach, but might be heard by bystanders moving against each other, when the hypogastric region was struck. This military stone-eater, who gratified the curious and amused the idle for a trifling guerdon, became the subject of a variety of experiments, which Dr S. has detailed in a very excellent inaugural dissertation, published at Edinburgh in 1777. * Although well concerted, abundantly simple, and clearly described; yet as they would only become tiresome when minutely detailed, it is sufficient for our purpose to mention, that Dr S. caused the Hussar to swallow at different times perforated silver balls, containing sometimes raw animal food, sometimes vegetable aliments; and, in other instances, the same substances roasted or boiled, and slightly masticated. All the substances thus submitted to the power of the stomach, were acted upon in a very conspicuous manner, although the changes induced were various in degree. In general, raw animal matters suffered less than those which

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* Philos. Trans. Vol. LXII. anno 1772, London, pp. 447—452.

† Philos. Trans. Vol. LXII. anno 1772, London, p. 454.

‡ Dissertatio Physiologica Inauguralis de Alimentorum Concoctione; Auctore, Eduardo Stevens, A. B. 1777, p. 34, *nota*.

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* Dissertatio Physiologica Inauguralis de Alimentorum Concoctione, Auctore Eduardo Stevens, A. B. 1777.

were roasted or boiled; roasted or boiled animal matters, which had been mechanically divided, were most completely dissolved; next to these, the substances which were contained in spheres with large holes, were, *cæteris paribus*, more completely dissolved than those contained in spheres with minute perforations; and lastly, the various vegetable grains, as wheat, rye, barley, oats, and peas, were least of all altered, having only become moistened and swollen; while bone underwent not the slightest change from the power of the human gastric fluid. The most interesting of all Dr Stevens's experiments with the Hussar, however, were those in which he enclosed leeches and earthworms in his perforated spheres; and found that even these animals, though introduced living, were dissolved as inanimate matters by the agency of the fluid of the stomach. The subject of the experiments having soon left Edinburgh, prevented Dr S. from continuing his inquiries; and he was, like others, obliged to have recourse to dogs and artificial digestions. The results of these investigations, though interesting, differ in no respect from those which had been obtained by other physiologists, especially M. de Reaumur.

It is indeed true, that it might be objected to these experiments, that they did not enable the physiologist to determine what precise share in the changes the stomach or its secreted fluid had; and, for any thing they prove to the contrary, these substances might have been altered entirely or partially, in any other division of the alimentary canal, in the duodenum, or in the ileum, or perhaps in the colon. It is singular that this fact seems to have escaped Dr Stevens, and is noticed merely in a cursory way by a subsequent inquirer.

" Prima di terminare questi racconti non debbo tacere un fatto in me accaduto, quando mi procacciai dal mio ventricolo per la seconda volta il suco gastrico. Quattr' ore prima di venire mediante il vomito a questo ributtante esperimento, io aveva preso due tubetti muniti di carne masticata di manzo. Uno di essi nel rigurgito del suco gastrico mi uscì di bocca. Era tutto intriso sì dentro che fuori di detto suco, il quale dava chiaramente a vedere, che cominciato aveva a digerire la carne, come appariva dall' esser questa già sfibrata alla superficie e resa gelatinosa. Inoltre si era ridotta al peso di 38 grani, quando prima d' inchiuderla nel tubetto ne pesava 53. *Cotesto esperimento prova dunque aversi una rimarcabile digestione da' suchi del ventricolo umano prima che i cibi rinchiusi tragettino agli intestini.*" *Spal.* II. 67.

Spallanzani, who had evidently been engaged in the investigation of the same subject, very soon published a most complete and satisfactory set of experiments. He examined the properties of the gastric juice, and the process of digestion, in almost all the animal tribes, and lastly in the human subject.

He had perused the short paper of Mr Hunter; but seems to have been totally unacquainted with the opinions of Dr Monro, or the experiments of his pupil Dr Stevens. He repeated and varied those of M. de Reaumur; and confirmed, in general, the results which that philosopher had obtained. To these he added a great many more, of some of which he made himself the subject. It is almost unnecessary for us to notice matters which are so generally known; but we may be allowed to say, that he verified the conclusions of De Reaumur and Hunter, so far as this could be accomplished, by means of artificial digestions, and observing the changes which various substances underwent in passing through the tube. It is painful, however, to think that this indefatigable and patient inquirer has been abused and vilified by many, who, it might have been expected, would be the most forward to thank him for his services. It has lately become fashionable to undervalue the merits of the Italian philosopher; to say that he has not added any important fact to our knowledge; and that he has certainly tortured and destroyed many animals to no purpose. * A regard for literary and scientific justice forbids us to adopt the sentiments of the very distinguished professor who has lent his high authority to a cause so questionable. It was enough, we think, that Mr Hunter, who was abundantly able to defend his own cause, should criticise the experiments of the Abbé, and point out where they were defective. But it ought to be kept in mind that, however well the process of digestion was known to Mr Hunter, yet the entire results of his observations were not accessible to the world when Spallanzani published his dissertations. With the exception, indeed, of the paper of Mr Hunter, no work of any consequence had appeared since the time of M. de Reaumur's Memoirs; and the Abbé's experiments certainly both filled up many vacuities in the information afforded by De Reaumur, and rendered the complete sum of physiological knowledge much more satisfactory. To any one who takes this view of the subject, it must appear certain that Spallanzani rendered most important services to science, and was certainly entitled to better treatment than that which he has experienced at the hands of Mr Abernethy, who, in his zeal for the glory of his friend, has certainly overstepped the modesty of candid criticism.

The publication of the Abbé's dissertations, which took place in 1782, called forth from Mr Hunter, about four years afterwards, some observations on digestion, containing remarks on

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* Physiological Lectures, exhibiting a General View of Mr Hunter's Physiology, delivered before the Royal College of Surgeons in the year 1817, by John Abernethy, F. R. S. &c. &c. London, 1817, p. 165.

the experiments and opinions of De Reaumur, Spallanzani, and Stevens, with some general facts and observations of his own. Although this essay is composed in the confused and rambling style for which Mr Hunter was so remarkable, yet it contains many profound views and reflections, which demonstrate the original and penetrating mind of its author. After taking a view of the experiments of De Reaumur and Spallanzani, in which he canvasses and criticises those of the latter very freely, Mr H. proceeds to inquire into the actual seat of digestion, which he thinks cannot be determined with absolute certainty; but he adduces various arguments—for example, the power of the gastric juice in effecting coagulation, to show that it takes place principally in the stomach. He thinks, however, that this process seems to be carried on in the duodenum likewise, because this intestine secretes the same fluid as the stomach; and this fluid, with part of the food, passes into the duodenum before it has been converted into chyle. He then proceeds to show, by various facts and reasonings, that digestion consists neither in fermentation, nor in coction, nor in chemical solution, but in a species of assimilation or generation, in which two substances give origin to a third. *

After this time, almost no writer of any eminence appeared on the subject of digestion in the stomach. The information which had been already collected was so satisfactory, and the facts were so numerous and so uniform, that it almost precluded the hope of adding any thing new. The subject was in truth exhausted. Accordingly, Dr Fordyce, who had made this function the subject of a Gulstonian Lecture before the Royal College of Physicians, published it in 1791, in the form of a Treatise on Digestion, in which he gave a summary view of the whole matter. We cannot discover that he has added any thing material to what was already ascertained; and he seems merely to repeat and to expound the opinions which Mr Hunter had already advanced on the intimate nature of the process. He does this rather in a singular way, with a considerable degree of scientific display, and argumentative pomp; but the work is, on the whole, an acquisition not without value to the physiologist.

It was not to be expected that the doctrine of Digestion could be any longer an object of investigation; the fluctuations of physiological opinion had subsided into perfect tranquillity; and the solvent, or rather assimilating power of the gastric fluid, seems to have been universally admitted as the sole and

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* Observations on certain parts of the Animal Economy, by John Hunter, 4to. London, 1786, pp. 147—183.

efficient agent of the changes which alimentary substances undergo in the stomach. Every one seemed satisfied with this very natural view of the subject; and the whole medical world might be said to be agreed on this important point.

But there is a tide in the affairs of philosophers, and opinions and doctrines are destined to obey its ebbings and flowings. There is assuredly, in the scientific mind, a something which loves uncertainty, because it is the source of investigation, and delights in change, because it gives a joyous excitement to the soul. Whoever has not felt, on striking out a new light on any mysterious subject, that mental elevation which, overlooking every other thought, is borne forward by the buoyancy of its own emotion, is none of the favoured children of knowledge, and may be assured that his heart has never been touched by the divine torch of science. In the bosom of that nursery of scientific doubt and inquiry which has lately been threatening the Hunterian system of lymphatic absorption, and reviving the ancient theory in favour of the veins, a new and dangerous schism arose, which proved the gastric fluid to be nothing but saliva and mucus. This heresy was broached by a daring innovator named A. Jenin de Montegre, who, in the close of the year 1812, read, before the Institute of France, a series of experiments on digestion: And of these we must now give a more minute account; *first*, because they seem to be not generally known; and, *secondly*, because they will bring this historical sketch down to the present time.

M. de Montegre's work, which is a *brochure* of some 50 pages, consists of two parts,—a historical account, as is seemly, of the labours of his predecessors, and a narrative of his own personal discoveries. Of the first we have no occasion to speak, unless to remark, that the author betrays a singular ignorance of the experiments of Dr Stevens, and the last Essay of John Hunter. For this, however, we forgive him. The second part comprises two subdivisions, one of which is on the existence and nature of this problematical gastric fluid; the other is expressly on the process of digestion. We premise that M. de Montegre is a ruminating human being, and possesses the faculty of raising spontaneously the contents of his stomach at any period of digestion.

Gastric juice brought up, in the quantity of two or three mouthfuls, from a morning stomach, was a frothy fluid, very little ropy, a little turbid, with mucous flocculi suspended in it, evidently derived from the membrane which is common to the whole canal. It had an acid, clean, and not unpleasant taste, particularly sensible in the throat; did not whet the teeth, but made them rough, and less easily moveable on each other; it obviously reddened the syrup of violets, tincture of turnsol, or paper coloured by this tincture.

A morsel of lean beef, which had been broiled, was divided into three parts; the first, being well masticated, was put with this gastric fluid and some saliva into a glass tube; the second, equally masticated, was enclosed with saliva only in a second tube; the third neither masticated nor impregnated with saliva, but minced as small as possible, was put with pure water into a third tube. The three tubes, well corked and numbered, were placed within a fold of flannel in the axilla. After twelve hours, the first and second emitted an equally shocking odour of putrid meat, their contents being no less consistent than after mastication; the third was so likewise, but in a less degree, as the odour of broiled animal substance was still perceptible.

In his second experiment of the following morning, M. de Montegre, having ascertained that his saliva gave no proof of acidity, brought up half a glass of fluid, in which he found no traces either of acid or alkali. Of this a portion was put into one tube; a quantity of pure saliva into another; and some of the same gastric fluid, containing unchewed bread-crumb, in a third. After being kept for twelve hours in the axilla, the first and second had become extremely fetid, and entirely similar; both had deposited little white flocculi, and become clear; both had lost their ropy appearance, and neither of them affected blue paper. The third tube had a sour, but not unpleasant odour; the bread-crumb had become pulpy, and the fluid reddened blue paper powerfully.

In a subsequent experiment, M. de Montegre ascertained that the bread, by becoming sour, had prevented the gastric fluid from putrefying.

M. de Montegre having felt one morning, when his mouth tasted bitter, the last portions of some gastric fluid both bitter and sour, and capable of affecting the usual tests, began to suspect that acidity was a condition depending on digestion, and accordingly swallowed a *demigros* * of decarbonated magnesia. Three quarters of an hour after, he eat some cold mutton with bread, and diluted this meal with a glass of pure water. For the sake of brevity, we present the results in the following form.

Time after Meal.	Changes in the Alimentary Substances.
Half an hour.	No proof of acidity; slight maceration; original taste; no appreciable change.

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* The *gros*, a French weight of the old *regime*, is equal to 72 Paris grains, or 59.0697 + English troy grains; consequently the *demigros* = 29.5348 + English grains,—very nearly 1½ scruple.

Time after Meal.	Changes in the Alimentary Substances.
One hour.	Partial digestion; food semifluid, and beginning to be homogeneous; distinct proofs of acidity.
Two and a half or three hours.	Food quite homogeneous; whole mass exceedingly acid.

In the experiment of the subsequent day, M. de M. having removed the acidity, of which there were proofs, by the same quantity of magnesia, devoured a large piece of beef-steak, covered, will it be credited? with melted butter! but using a most necessary precaution in such a meal, enveloped every morsel which he swallowed in magnesia. We present the results in the following manner.

Time after Meal.	Changes in the Alimentary Substances.
One hour.	Only macerated; some fragments detached and attenuated; none pulpy; fluid gave feeble proofs of acidity; tasted only of meat.
Two and a half hours.	All the fleshy portion digested, and reduced to a reddish soup; did not continue consistent.

Of the entire number, eleven experiments, these which we have detailed are the most important; from them M. de M. deduces, he thinks most rigorously, the following conclusions.

1. That the gastric fluid, or the liquor which is almost always found more or less abundantly in the stomach when fasting, is nothing but saliva.

2. That it is impossible to consider this fluid as a solvent *sui generis*, the peculiar properties of which enable it to prevent the putrefaction of animal substances, and still less to accomplish an actual digestion, independent of the action of the stomach.

3. That the acidity which is frequently remarked in this fluid is produced by the changes which the saliva undergoes in the stomach, and which resemble those taking place in alimentary matters in general.

4. That the transition of the alimentary substances to the acid state, is a natural result of the action of the stomach on them, and ought, in point of intensity, to depend on their chemical composition, which facilitates, in a greater or less degree, this acidity, and on the peculiar dispositions of the stomach itself.

5. That the chief purpose of the saliva and the gastric fluid, which are themselves to be digested, is to dilute or liquefy the solid aliments, and certainly to communicate to them, by mixture, a first degree of animalization.

The author has further the modesty to add, but merely as a probable circumstance, that the action of the stomach in digestion is reduced to a vital and elective absorption, in which the absorbent vessels, in consequence of a peculiar sensibility, take possession of certain aliments, but relinquish others, &c.

It is impossible for us, unless we could unlearn the entire doctrines which we have been at infinite pains to acquire during the last fifty years, to acquiesce in these conclusions; nor do we deem it likely that M. de Montegre will find many proselytes, at least in this country. It must be obvious to all, that M. de Montegre being himself the only subject of the experiments, is a very considerable objection. They inform us of the condition of his individual gastric fluid and digestive powers, but cannot be held to communicate any other intelligence. As to the acidity which he found occasionally in the gastric fluid, and always in the progress of digestion, we have had repeated occasion to remark it; but we always looked on it as a slightly morbid state, and by no means necessary to the healthy condition of the process. There are, we conceive, very few persons who eat, drink, and live as the generality of French and English do at present, without producing acidity more or less considerable shortly after eating. We do not even agree with the sentiment expressed in the Report on the Memoir by Messrs Berthollet, Cuvier, and Thenard, that an analogy may be remarked between digestion, in being attended, at least in man, with acidity; and the secretions which, according to Wollaston and Berzelius, may be divided into acid and alkaline. Now this, we conceive, to be a piece of premature theorizing, which might have been deferred till we were quite certain of the fact. We should wish to see the acidity incontestably ascertained, by numerous and varied experiments on many individuals of different ages, nations, and, above all, of different habits, before we attempt to explain it. Till then, we must decline admitting the necessity of acidity, or the explanation of it in healthy digestion in the human subject.

It was to be expected, that, whoever afterwards trod this debateable ground, should examine, and perhaps refute this new doctrine, which brought into discredit the inquiries of so many distinguished philosophers; and we accordingly took up the "General Views" of Dr T. C. Speer, with the hope at least of seeing some notice taken of the matter, if he did not adduce such arguments as would prevent the opinions of M. de Montegre from becoming prevalent. These expectations were considerably encouraged by our meeting the following observations in the preface.

"We need not state, that in this country Physiology has been most decidedly neglected, at least as a distinct science. The scattered discoveries we have made in it here and there, have been too important not to make us the more regret that we have scarcely a collective and confined system on the subject. The greater part of our physiologists have been merely physiologists on certain organs; each had his particular one to illustrate, and his particular discovery to offer; to this alone his attention was confined—by this, its connexion with the system in general, and its other relations, became neglected—the chain was broken in its links—and thus the science, as a body, has been always in the back ground with us.

"In France, and on the Continent, it has been long taught and studied, as its utility and importance demand. The medical schools in Paris show this; they have not thought that it was more a collection of "matters of fancy," than "matters of fact." They have taken perhaps more enlarged considerations of the animal economy and of medicine; and though their practical views of it as an art may be less accurate than ours, yet we must confess they have often given more dignity to it as a science, by the physiology they have infused into it.

"In the following pages I have attempted to throw a few lights on one of the most important, and perhaps the *most highly vital* of these organs. Much I know has been written on the subject; but much more remains to be written. I have not seen it discussed in the way to which I allude; at least the views taken of it were so mixed up and confounded with others, that they did not come before the reader in that shape which I think they ought to do.—They have been rather the results of individual and solitary cases, brought forward to support certain opinions."—*Speer*, *Preface*, pp. vi—x.

We regret, however, to remark, that a gentleman who is so sensible of the weak points of British medicine, seems, notwithstanding, to be but indifferently informed with regard to the state of his favourite science in the metropolis of France. From whatever cause it may originate, whether obliviousness or contempt of M. de Montegre's opinions and experiments, for we cannot suppose it to be ignorance, they are not even mentioned or alluded to in the "General Views." We find, indeed, after an elaborate account of the anatomy of the alimentary canal, in which are repeated all the every-day matters which are found in the common treatises on anatomy, from Winslow downwards, with some of those general remarks which may be found in Mr Hunter and Mr Abernethy's works, a rambling sort of jumble of many various opinions, without any attempt at precision, or accurate separation of the true from the false, and the ascertained from the problematical.

After many desultory remarks on the powers chemical and mechanical concerned in the process of digestion, we have a verbose sketch on the vital power, and caloric and nervous action, which is the principal constituent of this vital power, but which is promptly relegated to the subject of indigestion. Hear the conclusion of the whole matter.

"Thus the general agents of Chymification appear to be *Solution*, both chymical and mechanical—*Trituration*—*Nervous Action*—*Heat*—and *Moisture*: To these may be also added motion (as proceeding not only from the Peristole, which is then so active, but from the motion and pressure communicated by the abdominal muscles and Diaphragm); all seem equally active and energetic; and all their actions seem connected and mixed with each other. The Gastric fluid penetrates and dissolves the new materials—the fibres press on and triturate them—the moisture softens and macerates them—and through the whole mass the newly-created nervous operation, together with the heat and motion, bring about that internal action, to which Fermentation bears perhaps the closest analogy. Indeed the theory of Fermentation is certainly among the most rational that has been proposed for Digestion; but when we consider that fermenting substances require rest, and that in Chymification the materials are always moving—and when we consider some of the other characters and conditions of Fermentation, we shall find this theory inadmissible."—*Speer*, pp. 52, 53.

As our author has not attempted to correct the abuses introduced by M. de Montegre, we must take upon ourselves the task of adducing such reasonings as will perhaps tend to prevent the dissemination of this heresy, which has already, in a modified form, found its way into one of the best elementary treatises on Physiology which this generation has witnessed. †

1. In the *first* place, then, we think M. de Montegre's idea, that gastric fluid is nothing but saliva, is the most improbable and uncertain of all opinions that have been recently brought forward. If the gastric fluid be so, either it must be conveyed from the mouth where it is secreted, to the stomach, or the stomach must secrete the same fluid as the parotid, submaxillary, or sublingual glands. If this be actually the case, we should expect two events to take place; 1*st*, That saliva could perform all the functions of gastric fluid; 2*d*, That a man could digest his food as well in his mouth as in his stomach. That the first of these assumptions is totally false, no one will doubt, who knows that saliva cannot coagulate albuminous or mucilaginous fluids, which gastric juice, at least in its perfect form, can certainly do. That the second one is equally unfounded, will be admitted by every one who knows what a detestable odour is emitted by the mouth and teeth of those persons whose gums are habitually impacted with fragments of masticated food, and

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† Precis Elementaire de Physiologie par F. Magendie. Tome II. pp. 12-15.

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how unlike to digestion is the change which takes place in these substances.

2. We further think, that it was incontestably proved by the experiments of Spallanzani on himself, and those of Stevens on the Hussar, that there must have been a something,—no matter what,—probably a fluid, but at least something derived from the inner surface of the stomach, which effected in the alimentary mass the changes in which chymification consists. It avails not for M. de Montegre to tell us, that the artificial digestions which he attempted with gastric fluid did not succeed, and that we must therefore have recourse to the gratuitous assumption of an elective absorption, or to say that Reaumur and Spallanzani must have been mistaken in the results which they obtained.

3. Lastly, although they had been mistaken in these points, that would not diminish the weight of the experiments attempted within the stomach with the perforated spheres. We are indeed perfectly willing to admit, that in no instance of artificial digestion, could the precise circumstances in which the food in the stomach is placed be imitated. But this serves only to strengthen the arguments derived from Spallanzani's and Stevens's experiments on the human stomach. When a few crumbs of masticated bread, or a morsel of animal food, is inserted into a tin tube containing gastric fluid, and even exposed to the temperature of 97°, it is, nevertheless, by no means in the same circumstances with that which is deposited in the human stomach. In the glass tube, the same given quantity of gastric fluid continues to act on it until one change takes place; until its exterior surface is rendered soft, semifluid and chymous. But the gastric fluid which was thus employed must have been altered considerably in consequence of this very change; for, in every chemical action, the altering agent is itself affected by the action which it has accomplished. The dissolving agent, therefore, in the artificial digestion, can proceed no further in its action after the change which we have supposed has taken place.

In the cavity of the stomach, however, this solution or conversion into chyme seems to proceed in a manner somewhat different. The primary action of the gastric fluid is indeed very much the same as in the closed glass tube; but, when this is accomplished, the case is no longer similar, or the same. While the interior surface of the glass tube can no longer supply gastric fluid, a constant secretion of this agent is going on in the stomach, and fresh portions of it are incessantly, in the healthy state, poured out on the contents of the stomach. The portion of gastric fluid which we suppose requisite to act on the exterior part of the alimentary mass is no longer capable of producing any further change; but, being united in its altered state with the exterior stratum of food, is either subjected to the action of the gastric fluid more recently formed, and is thus itself chymified; or, it may be, along with the chymous mass, is removed from the exterior surface of the food, and thus allows a portion, not hitherto much altered, to be subjected to the gastric influence. Of these two events, the first has always a tendency to merge in the second; and it is this last which alone constitutes a difference sufficient to occupy our further reflections.

When the exterior chymous layer is thus removed, the subjacent one becomes then the subject of the action of the gastric fluid, the secretion of which continues during the whole time that the food remains in the stomach. The same change takes place with this surface as happened to the previous one; and successively the whole of the alimentary gastric mass is in this manner converted into chyme.

This description of the mode in which the gastric fluid acts on the food in the living stomach of the human subject, has been formed with close and accurate fidelity, from the experiments of those physiologists whom we have mentioned, and from observations made incidentally on the human subject, and intentionally on the lower animals. That the account is a faithful copy of the process of nature, we have every reason to believe; and no one who is conversant with the process, as observed in the lower animals, will venture to controvert it.

If, therefore, this description be correct, it will be found, on examination, that every attempt at artificial digestion, as it has been named, must differ from the process carried on in the natural situation within the cavity of the stomach by at least two circumstances; 1*st*, in the non-removal of the exterior, or changed part of the substance which has been submitted to the action of the gastric fluid; 2*d*, in the absence of the successive portions of freshly secreted gastric fluid—a process which is constantly going on in the living body, but which cannot take place in the interior of a glass or tin tube.

Neither of these circumstances, nor the reflections which preceded them, seem, so far as we know, to have occurred to any previous inquirer; but we rejoice to find, that in many points we have been anticipated by the conclusions which Dr Wilson Philip occasionally mingles with his experimental observations on the process, as remarked in rabbits, &c.

"It appears that, in proportion as the food is digested, it is moved along the great curvature, where the change in it is rendered more perfect to the pyloric portion. Thus, the layer of food lying next the surface of the stomach is first digested; and in proportion as this undergoes the proper change, and is moved on by the muscular action of the stomach, that next in turn succeeds to undergo the same change.

"As the gastric fluid, to a certain extent, pervades the contents of the stomach, though apparently in no other way than by simple juxtaposition, for the arrangement of the food, above described, we never found disturbed; the change in each part, which in its turn comes in contact with the stomach, is far advanced before it is in actual contact with it; and consequently is, soon after this, in a proper state to be moved on towards the pyloric end.

"Thus a continual motion is going on, that part of the food which lies next the surface of the stomach passing towards the pylorus, and the more central parts approaching the surface; whether food is ever so digested in the small curvature as to be sent to the pyloric portion without having traversed the large curvature, I have not been able to ascertain. When rabbits have fasted sixteen or eighteen hours, the whole food found in the cardiac portion, which is in small quantity compared to what is found in it after a fast of moderate duration, seems to be all nearly in the same state with that next its surface, the gastric fluid having pervaded and acted upon the whole, and is consequently, as far as we can judge, prepared to be sent to the pyloric end." pp. 58, 59.

The changes which the food undergoes in the stomach, which have occupied such a disproportionate space of this article, seem to have prevented physiologists from bestowing a due degree of attention on the next part of the process of alimentation. The changes which the chyme subsequently undergoes in the duodenum, are at once more obscure, and have been less investigated, than those alterations which we have already considered. It is believed in general, that they are accomplished by the affusion and combination of the biliary and pancreatic fluids with the chyme, as it is only at the level of the duct by which these fluids are conveyed into the intestine that the chyme begins to change its properties. Its colour then becomes yellowish, its taste bitter, and its sharp odour diminishes considerably. If it has been formed from animal substances or vegetable matters which contain fat or oil, we see formed, at various points of its surface, filamentous substances of an irregular figure, sometimes flattened, at other times rounded, which quickly attach themselves to the surface of the valvular folds of the intestine. These appear to be the chyle in a rough state. This filamentous matter is not observed in chyme formed from food not containing fatty matters; in these it is a greyish layer, more or less thick, which adheres to the mucous membrane, and which appears to contain the elements of chyle.†

It would be vain for us to fill our pages with the whimsical fictions with which authors have amused themselves in explaining the properties and effects of bile. We can scarcely mention any writer whose speculations on this head merit attention, except Dr Saunders and Mr Abernethy; but even the information which we glean from them, on the changes which take place in the chyme after quitting the stomach, is exceedingly scanty, and sometimes vague.

Amidst the sceptical ignorance in which one class of physiologists would leave us, and the all-explaining hypothetical descriptions with which others have favoured us, it is impossible not to think, that there is a want either of precise and unquestionable facts, or of accurate and logical reasoning. There are, indeed, some leading points which are well ascertained; while others are so uncertain or equivocal, that it is difficult to know what we ought to believe. We shall attempt to separate these from each other, in the form of a series of questions.

1st, Is the biliary fluid requisite for the formation of chyle? Or does this substance exist already formed,—and does it merely require to be detached by some energetic agent?

2d, If the chyle exist in the chyme already formed, is it detached from the latter merely by some elective power of the chyliferous absorbents? or does the biliary fluid perform an active part in the separation?

3d, If the biliary fluid be necessary to this separation, in what mode does it effect its purpose? what ingredient of this fluid is essential and principal, and what is accessory?

We have already stated, that the chyme, as it is prepared in the stomach, remains unchanged even in the pyloric portion of the duodenum; and that it is only at the level of the orifice of the biliary and pancreatic ducts that an imperfect chyle can be observed. To this we may add the anatomical fact, that no chyliferous vessels have been observed to arise from the internal surface of the stomach or pyloric part of the duodenum; so that it cannot be expected that the chyle should be prepared in a situation where there are no vessels to absorb it. It appears, therefore, to be certain, that the chyle is at least never formed before that point of the intestine at which the biliary fluid can have access to the chyme. But it is by no means equally certain, that whenever the bile has access to the chyme, a portion of chyle is formed; and that, when the flow of the biliary fluid is obstructed, this process is either imperfectly performed, or entirely interrupted. We think however that, in the cases alluded to, the suppression has existed too short a time to draw any fair inference; and it ought to be kept in mind, that the functions of an animal body have a property in some instances of accommodation, by which a secretion like the biliary may be for a short time suspended, without producing fatal inconvenience. But even in persons affected with jaundice, or other maladies in which the proper application of the bile to the chyme is prevented, we cannot say that the adequate changes are produced in the alimentary substances. The emaciated unhealthy appearance, the loss of appetite, and the sense of languor and debility, are sufficient to show that the process of chylification is not perfectly accomplished; and if such a cause continued to operate long, we have no doubt that the symptoms of deficient nutrition would be abundantly obvious.

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† Précis Elémentaire de Physiologie, par F. Magendie, pp. 92, 95.

A more important desideratum in this investigation, however, occurs in the following question:—Are there any instances in which chyle was not perfectly formed, when healthy bile was poured into the duodenum? So long as no example of this kind occurs, we are at liberty to think that chyle cannot be formed without the affusion of biliary fluid.

When we come to inquire into the kind of effect which the bile produces in the chyme, we are met by explanations, numerous, hypothetical and unsatisfactory, which may be omitted entirely, while we state what may be precisely and certainly concluded from the knowledge of its chemical composition. To omit the discordant and sometimes absurd results of most of the analyses of the biliary fluid, we consider it as ascertained by the inquiries of Berzelius, that bile consists of ingredients, which may be referred to three heads only—1. Water; 2. Saline substances; 3. Peculiar biliary matter.

The saline substances, which are nearly the same, and in the same proportion, with the exception of a trifling excess of alkali, as in the other animal fluids, can have no peculiar effect, we conceive, in inducing the alteration which the chyme undergoes in the duodenum. The water may be viewed as a diluent or vehicle of that peculiar matter which characterizes the bile; and which is, to a certainty, the great agent of those changes which, for the sake of brevity, we denominate *encholosis* or *biliation*. It is this peculiar matter which effects the separation of the chyle from the chyme, and upon the state of which, the perfection of this separation depends. It avails not to tell us, that, in many persons in whom the secretion of the biliary fluid is for a considerable time either wholly suppressed, very deficient, or much depraved, it does not appear that the nutrition of the body is defective.* It may not be defective;—nay, it may sometimes be excessive; but the point at issue is, whether the individual enjoys good health;—whether the digestive or alimentary functions are performed in the proper manner;—whether he feels that easy and tranquil state of body and mind which denotes the vigorous and sane exercise of the most important actions of alimentation. We contend, that there is almost no instance in which this secretion is excessive, defective, irregular or depraved, in which the alimentary function is not proportionably altered. There may indeed be modifying causes which may counteract the effects of such deviation, if only temporary, or of short continuance; but when they have lasted for any time, the state of health which follows is in general characteristic enough.

Although we trust that we have established that the peculiar biliary matter is the prime agent of encholosis, in opposition to the chemical fancies of the saline and albuminous matters going one way, and the oleaginous and resinous another in the process; yet we fear we cannot pretend to enter into the examination of the exact mode in which the change is accomplished. It is certain, from the analysis of Berzelius and the best chemists, that the biliary matter is itself decomposed; but no part of it seems to unite with the chyle; for the whole almost is found either partially or entirely decomposed in the feces. It would appear, that on this susceptibility of decomposition depends in a great measure the healthy performance of the function. If the biliary matter be not decomposed, a violent derangement of the alimentary canal ensues, and, in various degrees, constitutes bilious vomiting, bilious diarrhoea, and absolute cholera. That this is literally and truly the case, we conceive to be proved by the fact of biliary matter being, in such circumstances, expelled undecomposed from the mouth and anus.

We have dwelt so long on the subjects of digestion and encholosis, that we cannot extend any further on the subsequent processes of alimentation, which indeed are rather to be viewed as supplementary, and much less important. But it may not be uninteresting to remark, that these primary and essential agents are much influenced in their action by others which may be denominated accessory. These are the temperature of the viscera, the motion which they receive from the organs of respiration, and the compressing force to which they are subjected in consequence of being placed between two muscular organs, the diaphragm on the one hand, and the abdominal muscles on the other. These accessory promoters, as they may be called, of alimentation, have been commonly noticed by physiological writers as influencing digestion, or the action of the stomach only: but they ought to be viewed as circumstances common to the whole of the alimentary viscera. It is evident that they act not only on the stomach, but on the whole alimentary canal, with the exception perhaps of the duodenum, the immovable situation and comparative rest of which are perhaps necessary to the changes which take place in its interior. The influence of these causes is very conspicuous in individuals of active and laborious habits; and we may learn that they are beneficial, from observing the effects which take place when they are either impaired or diminished.

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* Surgical Observations on the Constitutional Origin and Treatment of Local Diseases. By John Abernethy, F.R.S. &c. &c. Fifth Edit. 1820. p. 32, etc.

We have been somewhat minute, and, we fear, rather tedious, in examining the evidence on which the theory of digestion rests; because correct views of the nature of the alimentary function are particularly important at present, when the peculiar circumstances of society render it so liable to derangement and irregularity. In a refined and wealthy community, where every thing tends at once to foster and gratify the taste for luxury, many causes conspire to induce unhealthy states of the alimentary function, and the organs concerned in it.

We cannot indeed say that such diseases fall uniformly and exclusively on your fashionable *gourmand* or your turtle-eating alderman; but it must be obvious, that affections of the alimentary canal, and derangement of its functions, are generally more frequent in such a state of society as the present, where the operation of habits of this description is favoured by the aversion to the laborious and manly exercises, which seldom fails to distinguish the more refined stages of society. Inactive and luxurious habits, the pleasures of the table, and every gratification which a skilful and inventive system of cookery can contrive, to rouse a torpid, or generate an artificial appetite, all tend to impair, not only the strength of the constitutional powers, but, in a particular manner, those organs to which causes of this description are more directly applied. It is the apparatus destined to nourish and strengthen him, that originally and principally suffers from the unnatural habits of man in polished life; it is this part which then becomes the seat and source of numerous and complicated maladies,—which imbitters every enjoyment of life, obscures every faculty of his soul, and converts even his food into poison and death.

" Some of these causes to which we have alluded operate more particularly on one part of the alimentary canal, and thus induce a condition unfavourable to its healthy action; while, in other instances, we find a different part of it rendered the seat of disease. But in whatever point the morbid condition originate, it rarely happens that the entire apparatus is not affected in a considerable degree, and that the general health does not suffer from the continuation of such deranged action. It is this proteiform hydra, in the shape of diseases of the digestive organs, which infests the abodes of luxury and fashion, and is the most perplexing enemy—we are not so selfish as to call him a friend—of the physician's endeavours. We believe every medical practitioner, who is conversant with the practice of a rich and populous town, finds that the greater part of his care and attention is occupied in combating affections of the alimentary canal, or obviating the unpleasant effects which are produced by irregularities in the actions of its parts. Corresponding to the predominancy of such maladies, we find the attention of physicians and the publications of medical writers; and we think few will venture to doubt, that, during the last twenty or thirty years, there has been a greater number of publications on this subject, and those more immediately connected with it, than on any other in practical medicine. We have had hosts of authors on stomach complaints; derangements of the *primæ viæ*, and their effects on the economy; gastric affections, intestinal affections; many on the deranged secretion of the liver; and not a few on the effects of mineral waters, and some of the more energetic articles of the Materia Medica, in palliating, relieving, or removing these diseases. Many of these performances are of course destined, after enjoying a merely ephemeral celebrity, to sink into merited oblivion; some never attain any remarkable portion of public attention; and a few, perhaps, will outlive the caprices of fashion and opportunity, and either retain the deserved renown which they have acquired, or continue to be more highly prized the longer they are read. We cannot join in the general opinion of reviewers, that the two former classes of works ought never to have seen the light; for we consider it as an established point, that, in order to have any thing very good, there must be much mediocrity, and a good deal of matter which is either useless, or positively bad; and we think that it is a pretty uniform law in the arrangement of human affairs, that the greater the number of competitors, the more is the chance of eminence and excellence. . . . .

" Among the many treatises which have been published since the time of Dr Cullen on this subject, we can hardly mention more than two, the character of which is of that superior nature which will ensure their value, we may say as long as medicine shall be studied and practised. The treatise of Dr Hamilton on the Effects of Purgative Medicines, and Mr Abernethy's Observations on the Constitutional Origin and Treatment of Local Diseases, require no praise from us; for they have already received from the profession the most gratifying of all testimonies regarding their merit. Since the publication of these works, several have appeared on the same subject, as we have already hinted; but none, perhaps, could come before the world and the profession capable of exciting interest equal to that which we believe must be very generally felt, at the appearance of the work which forms the principal subject of this article. The author has been long known as a most enthusiastic cultivator of the medical sciences; as a gentleman who, though external circumstances rendered exertion less necessary to him than to many others, has never ceased to avail himself of every opportunity of elucidating those processes of the animal economy, the knowledge of which would be the most beneficial to the practice of the healing art. His writings, which are somewhat voluminous, have been long before the world; and his character as an author must have been estimated with tolerable accuracy some time ago. His reputation, indeed, in this respect, and further as an experimental physiologist, is so considerable, that every thing which issues from his pen is received with a degree of respect, which shows that he has not entirely laboured in vain. Yet we cannot avoid thinking, that there is a want of that precision and accuracy which ought ever to characterize the philosophic physiologist. His reasoning is often vague, his arrangement often confused; and although he writes on the whole well, yet it wants that life and effect which carries conviction with it. His style is diffuse, and remarkable for employing a multitudinous array of words to express very simple thoughts,—it wants concentration and strength. We trust that Dr Wilson Philip's reputation is so well established that it cannot be affected by our opinions; but we fear we are not solitary in thinking, that, although the present work would be creditable from any other hand, yet it will add nothing to his fame. In a respectable octavo of 360 pages, we might certainly expect the man of genius to shine through at some parts of a subject on which so much has been accumulated; yet we toil through the book with a sensation of *ennui* and defect of interest which is quite unaccountable. Although the information collected is actually great and useful, yet the manner in which it is communicated is not favourable for reference. The Doctor, indeed, does not hesitate to say, that the reader will not always find titles in the body of the work corresponding to those in the table of contents; and the reason which he assigns for this, viz. the intimate connexion of the individual subjects, is certainly very insufficient; for it would apply with equal force to any score of subjects on which books are daily published. The object of the author is stated in the beginning of his Preface in the following manner.

"My chief objects in the following Treatise have been to give arrangement to the various affections which have been termed Nervous and Bilious; to ascertain the nature of the disease on which they depend; to trace the causes which determine them to assume the various forms in which they are presented to us, and to determine the appropriate treatment of each of these forms." *Pref.* p. xi.

He subsequently, in a short but perspicuous Introduction, states the importance and difficulties of the subject; and announces the general arrangement which he adopts. From it we give the following extract as the author's account of his work.

"It is a remarkable fact, that there is hardly any disease less understood than that which is most frequently presented to us, and known under the vague denominations of bilious, nervous, and stomach complaints; which seems the more extraordinary, because there is none of greater importance, whether we regard its variety, its consequences, or its connexion with other diseases." p. *1.*

"The following Treatise may be divided into four parts:—In the first, I shall present to the reader a review of the symptoms, and more immediate consequences of Indigestion; in the second, consider the remote causes of this disease, the manner in which they excite it, and the nature of the changes which take place in its progress; in the third, detail the plans of treatment which have appeared to me most successful in it; and in the last, make some observations on the symptoms and treatment of the organic derangements, in which it often terminates." p. 4.

From the views which we have already given, it will be easy to see how many causes may derange the function of alimentation, and induce symptoms of indigestion. Dr Wilson Philip adheres to the safe and useful division of remote and immediate. The former he divides into those which act directly on the stomach and intestines, those which act on other parts, and those which affect the whole system, (p. 70.) In illustrating the operation of these causes, we encounter a great deal of the usual disjointed and pointless mode of reasoning, of which we have already spoken; and, indeed, he observes so little order in this part of his subject, that it has the air of a few unconnected and desultory remarks rather than a classification of the causes, and a clear statement of the mode in which they operate. The division of the causes, it is to be noticed, is precisely that of Dr Cullen, with the addition of the intestines to the first head of causes; but we find no elucidation of this accessory part; nor does the author give us any precise information on the second and third heads.

On the second part of his general division, our author observes—

"The immediate causes of a disease are the states of body induced by the remote causes, and from which all the symptoms more or less directly arise. A knowledge of these causes is of the greatest importance in conducting the treatment of the disease. Where we are altogether ignorant of them, the treatment is founded merely on the principle of employing the same means which have formerly proved useful, and which were originally suggested by our general knowledge of the laws of the animal economy, or by accident. But it is only in proportion as we are acquainted with the immediate causes of a disease, that we can with any confidence, or great chance of success, so influence those laws, as to restore due action to the diseased part; and in the instances, in which, after having long treated diseases on the vague principles, which are our only guides when the immediate causes are wholly unknown, we have at length arrived at a knowledge of these causes, we perceive that many parts of our former plans were superfluous, and not a few, although affording some present relief, injurious." *Philip*, pp. 84, 85.

Now, we are certain that all this vague and tedious dissertation might have been avoided, by a more judicious arrangement of the subject. It had been better, we think, to place the immediate causes, or rather the pathological states—for we conceive this to be what the Doctor is aiming at—of the alimentary organs, which give rise to the assemblage of symptoms named dyspepsia, indigestion, &c. first, and then to consider the remote causes and their operation after these. But as this arrangement is at the best an inconvenient, if not an imperfect one, and as even the Doctor himself admits the propriety of a knowledge of the agents employed in health, in order to show their modified operation in disease, we would recommend the following arrangement, as one which should include all the causes, immediate and remote, which induce the disease.

I. Derangement in the primary or essential agents of alimentation.

II. Derangement in the secondary or accessory agents of alimentation.

Of the former, we give the following subdivision.

1. Changes in the state of the mechanical processes of mastication and insalivation.

2. Changes in the state of the gastric fluid.
3. Changes in the state of the gastric mucous membrane.
4. Changes in the state of gastric muscular fibres.
5. Changes in the state of the biliary secretion.
   Under this head, we notice the circumstances which may influence the biliary secretion.
   - α, States of the hepatic capillary system.
   - β, States of the capillary system of the portal veins.
   - γ, States of the excreting ducts.
6. Changes in the state of the pancreatic secretion.
7. Changes in the state of the intestinal mucous membrane.
8. Changes in the state of the intestinal muscular fibres.

It is evident that these individual morbid conditions may be referred to four general heads, according as they are more especially seated in the mouth, stomach, duodenum, or small and large intestines; and we think it requires merely a knowledge of the healthy state to comprehend how they are to act in the morbid. There is only one of these conditions which requires perhaps to be particularly inquired into,—the influence which the contents of the intestines have on the capillary system of the portal veins, and, consequently, on the biliary secretion. The recent experiments of Tiedemann and Gmelin, those of Mayer, of which we gave an account in a recent Number, † and those of Magendie, show that the venous *radiculæ*, which arise from the ileum, absorb with great facility almost all substances which are applied to the mucous membrane. It is easy to see, therefore, that, whatever be the nature of the intestinal contents, the blood in the portal veins will be modified by it, and, consequently, the secretion of bile be subject to fluctuation and modification from this cause. In this manner, if the contents of the intestine be detained longer than is proper, the biliary secretion must be very much affected by it, be more tardy, and perhaps less copious and less pure, than in circumstances of healthy intestinal action. In this way, we believe, may be explained the imperfect alimentation which arises in the system, in consequence of long habits of constipation, and likewise the mode in which remedies often operate. The blue pill seems to be often taken up by the *radiculæ*, and thus to induce a new action in the blood of the portal capillary system. In cases of purgative remedies, it may happen that part of the substances employed may be actually absorbed by the venous *radiculæ*, and there occasion a peculiar change in the biliary secretion; or, by the removal of substances injurious to the intestinal tube, may prevent them from affecting the action of the liver. This appears, we further think, the only rational mode of explaining the intimate connexion which subsists between the liver and intestinal tube, and which may be remarked in most of the affections to which the latter part especially is liable.

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† *Vide* p. 455 of this volume.

When the qualities of the agents concerned in healthy digestion are so altered that they cease to operate on the food in the usual manner, the contents of the stomach may remain to a certain extent unchanged, but ultimately undergo spontaneous decomposition; an event, the earlier or later appearance of which depends on the chemical nature of the substances eaten, and on the temperature and fluidity in which they are subsequently placed. It is well known that the alimentary mass in such circumstances produces, both on the organ in which it is contained, and on the system at large, effects very different from those which arise from the presence of healthy chyme; and that these effects must in general augment in its progress through the canal, to every point of which substances are successively and continually applied in which the necessary qualities are wanting. The whole of the effects to which we allude, and which have been named by practical authors symptoms of indigestion, are divided by Dr W. P. into three stages;—the first characterized by the ordinary symptoms of dyspepsia; the second, by the circumstance of tenderness of the epigastrium, and hard pulse being superadded; while, in the third, the morbid phenomena of the two previous stages have induced some organic change in the texture of one or more of the chylopoietic viscera, or, as it may happen, in those of the head or chest. That our readers may be enabled to form some conception of these organic changes, the author shall speak in his own person.

"With regard to the circumstances which dispose the sympathetic disease to affect one part in preference to another, we have reason to believe that this is chiefly determined by different parts in different individuals being more liable to disease than others, and therefore feeling more the cause of irritation which affects the whole system. Thus, in children who are disposed to inflammation and subsequent effusion in the ventricles of the brain, Indigestion often terminates in hydrencephalus internus. From about fifteen to thirty-five years of age, the disposition to affections of the lungs is greatest, and it often produces phthisis. At a more advanced period, a tendency to disease of the rectum prevails, and in old age to affections of the heart and head, the latter however of a different nature from those to which children are subject; and we still observe the tendency of indigestion to produce the disease to which the system is disposed, whatever be its seat."—*Philip*, p. 45.

We think there are good grounds for this threefold division of the symptoms of indigestion; but we confess we found it difficult to obtain from his short history any clear or distinct notions of the different stages. This desideratum, however, is supplied in another part of the work, where it is not likely our author's readers will look for it. We find, in truth, much more information on the nature of these different stages, and especially the two last, in that part of the work which is devoted to the treatment of the disease; but it must occur to every one, that such violation of the order which is adopted, will tend very considerably to perplex and confuse the ideas of the student. An obvious evil which results from this style of communicating knowledge, is the frequent repetition of subjects which have already been noticed, and the anticipation of those which were yet to come. For although it may be said that this inconvenience is to a certain extent unavoidable, yet we think it might, in the present instance, have been much less frequent, had the author bestowed a little more attention on the arrangement of his work.

Dr W. Philip is at great pains to elucidate the mode in which the morbid changes are effected, and in which they give rise to the symptoms of the different stages. After a discussion of some ten pages on the eighth pair, and on the muscular power of the stomach, in which the nervous sympathies of Willis and his followers are dispersed in thin air, and the influence of juxtaposition erected in their place, the author's experimental inquiry and Mr Brodie's experiments are made to inculcate the following dogma,—"That any diminution of the extent of the organs which supply the nervous influence, affects the state of the secreting surfaces, and impairs the evolution of caloric." After some desultory ponderings on Mr Abernethy's cases, and on certain observations of Mr Guthrie in his work on Gunshot Wounds, we find the following summation.

"When the whole of the facts which have been laid before the reader in this and the preceding sections, are kept in view, it seems easy to point out in what way the remote causes of indigestion operate in producing all the symptoms of what I have called the first stage of this disease. The debility induced by these causes on the muscular and nervous powers of the alimentary canal, on the one hand, by preventing the due change on the food, and its due discharge into the duodenum, and progress throughout the rest of the canal, produces the symptoms which immediately arise from undigested food; and on the other, either by its direct effects in the stomach and bowels, or through the operation of the undigested food and vitiated secretions, excites the nervous derangements which affect these cavities themselves, or other parts.

"But in the second stage of the disease, we see a change which cannot be referred to either of these heads; I mean the occurrence of tenderness in a certain part of the epigastric region above described, which hardly ever fails to supervene in protracted cases, and, when considerable, to be accompanied with a pulse which will be found more or less hard, if examined in the way above pointed out, and some of the other indications of fever which have been enumerated."—*Philip*, pp. 99-100.

The subsequent parts of this section are, on the whole, very interesting; and the patience of the reader will be rewarded with some useful information on the semeiology of the disease.

The treatment of indigestion forms, we conceive, the best part of our author's performance. It certainly occupies by far the greatest proportion of it; and we must admit, that the Doctor bestows on the subject the fullest consideration. The remedial management is naturally suited to the different stages of indigestion; and the author very rationally commences with dietetic directions, which imply, to a certain extent, the removal of the exciting causes of the disease. But we have here again the same unpleasant disorder to encounter; for, instead of confining himself strictly and closely to mere treatment, Dr Philip intermingles innumerable physiological and pathological observations. Now, we have only to ask, why did not these come in their proper place, and not meet us *passim* where we least expect them? The remarks and reflections are of themselves good, but they are totally misplaced in the situation in which they are found.

When we are following the author in his reflections and reasonings on one subject, which we are led to expect will be fully and consecutively investigated, the chain is abruptly and suddenly broken off by some extraneous remarks,—some insulated episode, which it must be acknowledged is excellent in its kind, but ought certainly to have been presented in another place. It will not perhaps meet with very ready belief, that, after a discursive sort of treatise on the bile and best mode of administering the blue pill, our author gives us a dissertation of seven octavo pages, in which it is difficult to see what is the main subject of consideration, but in which the discordant articles of air, hot, cold and moist, saline medicines, mercury, colchicum, antimonial medicines, change of air, travelling, and, lastly, a *tirade* against fancy, as a cause of weal or woe, are made to perform conspicuous parts. He then launches into a very protracted discussion, the chief business of which seems to be, to illustrate the nature of the second stage of indigestion. To accomplish this desirable object, he lays under contribution the green jaundice of Dr Baillie, sympathetic action and nervous irritation begetting inflammatory affections, the liver as the first organ which partakes of the disease of the alimentary canal, blood-letting, irritation of the bowels, opening medicine, symptoms of pectoral affections, palpitation, rheumatic limbs, affections of the head, blood-letting once more, nervous apoplexy (what apoplexy is not so?) and closes the whole with a general recapitulation. Of all this, we can make room for the nervous apoplexy only.

"Alarming as some of the inflammatory affections of the head are, its nervous affections connected with irritation of the digestive organs, contrary to what we see in other organs, are often still more so; and when they occur in the second stage, supersede the inflammatory tendency. They appear to be of two kinds; the one arising from long-continued irritation of the nerves of so important a part of the system as the digestive organs, directly debilitating and sometimes wholly destroying the source of nervous influence; the other from this irritation affecting the state of the vessels of the brain, and consequently the distribution of that portion of the blood which is sent to the head.

"The former of these is only a greater degree of the affection which is usual at all periods of Indigestion. Giddiness and temporary loss of power, or vitiated feeling in various parts of the body, we have seen, are not uncommon symptoms even from the commencement. But it is in those cases where powerful and repeated causes of irritation on the one hand, and, on the other, the continuance of that general derangement occasioned by Indigestion, which every where affects the secreting power, and consequently the state of every part, have gradually enfeebled the powers on which the supply of nervous influence depends, that these symptoms become formidable. It is not very unusual, under these circumstances, to see the patient, after the above symptoms have frequently recurred, and sometimes without this warning, suddenly fall down, and in a few hours, and in some cases almost immediately, expire.

"In such cases the aids of medicine are vain. The powers of the constitution are not oppressed by disease, but worn out by its continuance. This is what is properly termed nervous apoplexy, the most fatal of all its forms; and it has been remarked, that in some cases no morbid appearance presents itself on dissection. The fatal derangement is in the nervous system alone, whose structure is too minute for our observation. If the usual plan of bleeding in all cases of sudden insensibility be here resorted to, the disease is only the more suddenly fatal.

"The state of the brain in such cases resembles that which Surgeons call concussion. Its mechanism is deranged. The difference is, that in the one this mechanism is deranged by a sudden and violent cause, applied while the powers of the system, with the exception of the effects of this cause, are entire, and which, if the little strength which remains is carefully husbanded, may often repair the injury; and the other is the effect of a succession of slight causes gradually changing the mechanism of the brain, and at the same time exhausting the powers of every other part, so that the constitution possesses no means of repairing the injury.

"The pure nervous apoplexy, however, as here described, is necessarily an extremely rare disease; because it very seldom happens that the causes continue long enough so to derange the finer mechanism of the brain as to produce loss of function, without influencing the state of the circulation in it in such a manner as to produce a fatal effect in this way.

"There is something at first view very inexplicable in the phenomena of apoplexy, such as it often appears in those who have long laboured under the more severe forms of Indigestion. Dissection has not only shewn that sanguineous apoplexy, which is generally attended with a flushed countenance and strong beating of the temporal arteries, sometimes occurs, when, from the paleness of the countenance and the previous symptoms, as well as nervous habit of the patient, we should have expected to find the blood in the brain rather below than above the due quantity; but that such is often the state of the vessels of this organ, when the countenance, on the attack of the apoplexy, becomes much paler than before, and the beating of the temporal arteries hardly perceptible. Nay, such cases will often be relieved by blood-letting, although it is always prudent to employ it with the greatest caution; for, independently of other considerations, we have no certain means of distinguishing them from the case we have just been considering, in which blood-letting always hastens the fatal termination." *Philip,* pp. 275—277.

The most interesting, and certainly the most original part of the book, is yet to come. This is the account of Dyspeptic Phthisis, a subject to which Dr W. Philip called the attention of the profession, about sixteen years ago, in his Treatise on Febrile Diseases. Every one, we believe, is acquainted with the well-marked case of Mr Abernethy's coachman's wife, who got rid of her phthisical symptoms by the salutary influence of the pills of calomel and opium on the chylopoietic viscera. Dr P. has had occasion to observe several cases of this description, and the result of his observations is here laid before the public in a more enlarged state. The dyspeptic phthisis seems to differ from the usual forms of the disease, chiefly in the mode of its origin. It is preceded by lasting and obstinate symptoms of indigestion; by dyspnœa, and violent paroxysms of cough coming on, and continuing for some time after eating, or in the recumbent position. The emaciation is less rapid, and the hectic fever is generally formed later than in the usual kinds of phthisical disorganization. While Dr W. P. is reasoning and meditating on the nature of this malady, he is unavoidably led to Mr Abernethy and the blue pill; and we are forthwith entertained with a digression on a gentleman with severe pain of the legs, tender epigastrium, and deranged digestive organs; a lady with glandular swellings, disordered bowels, and tender epigastrium; a patient with angina pectoris—all which yielded to the celestial blue pill; and, as a *finale*, Dr Cheyne, Dr Yeates, and the *Hydrencephalus intermus*, are brought forward. The treatment of this disease occupies so much of our author's attention, that abridgment would only injure it; and as we would not, for the riches of the caves of Istakhar, be accessory to such an outrage, we must refer our readers to the work itself.

The Second Section of this Part presents us with an Essay on Habitual Asthma, and the power of galvanism in removing it. This disease, which is a symptom and a sequela of indigestion, and sometimes continues after all the other symptoms have been removed, consists in constant oppressed breathing, better and worse at different times, but never entirely free, considerable cough, with the secretion of viscid mucus or phlegm, as Dr P. names it, from the bronchial membrane, which is in general expectorated with great difficulty; and in some cases disappears, according to our author, without being coughed up. This condition of the bronchial membrane, our author deems analogous to that produced in brute animals by the division of the pneumo-gastric nerves; and conceives to arise directly from an impaired secreting action in the human subject, depending on the weakened nervous influence of the lungs. The remedy which has uniformly relieved and sometimes cured it, is galvanism; which either occasions the disappearance of the mucus, or its expectoration, and thus relieves the breathing. The application is contraindicated only when there are inflammatory symptoms, which must be combated in the usual way by venesection. Of two cases which are given to illustrate the nature of the disease, and the power of the remedy, we select one.

" The first was made on an intelligent lady, of about thirty-five years of age, who had for many years laboured under habitual asthma. Her breathing was very much oppressed at the time when she first used galvanism. The immediate effect was, that she breathed with ease. She said she had not breathed so well for many years. Part of the relief she obtained proved permanent; and when she was galvanised once a day for about ten minutes, she suffered little dyspnœa at any time. After she had been galvanised for eight or ten days, I deceived her in the manner just mentioned. The deception was complete. She told me to increase or lessen the force of the galvanism, as she was accustomed to do, according to the sensation it produced. I obeyed her directions, by increasing or lessening the force with which I scratched the neck with the wire. After I had done this for five minutes, she said the galvanism did not relieve her as usual, and that she felt the state of her breathing the same as when the operation was begun. I then allowed the galvanism to pass through the chest, but only through the upper part of it, the wire in front being applied about the middle of the sternum. She soon said that she felt a little relief; but although it was continued in this way for ten minutes, the relief was imperfect. I then directed her to apply the wire in front to the usual place, so that the influence might pass through the whole extent of the chest; and, in a minute and a half, she said her breathing was easy, and that she now experienced the whole of the effect of the former applications of the remedy." *Philip*, pp. 358–360.

The work of Mr Law we consider for two reasons—its unassuming character, and the extreme youth of the author—as scarcely a fair subject for the severe justice of criticism. The whole book consists of six sections, in each of which the author doubtless intended to treat of particular subjects, or separate divisions of the entire subject; but they have, notwithstanding all his precautionary efforts, intermingled in such a promiscuous and irregular manner, and the reasonings and reflections destined to each have so run off at random, in all sorts of improper directions, that it becomes no easy matter to recognise the scattered fragments of the author. It may not, however, be without its use to our readers to say, that the chief object of Mr Law seems to be to discriminate the kinds of treatment suited to different forms of disorder of the digestive organs, and to assign to each its appropriate virtues. Our professional brethren may not indeed be willing to admit that this object has been accomplished, and may not perceive much novelty in the "Observations;" yet we deem it an auspicious omen of Mr L.'s future services to the art, when we see him at once convinced of the important and complicated nature of the subject, and following the path of an observer of Mr Abernethy's bold and original mind.

If there be any wisdom in antiquity—if there be any truth in ancient sayings—if, in short, we are to rate the merit of a work in the inverse ratio of its size, then the little tract of the author of the "Cook's Oracle" must be excellent. The "Peptic Precepts" form a small portable duodecimo, containing a variety of practical directions for preserving a good appetite if one has it, and improving it if indifferent. It is difficult to say in what light we are to view the author; for the easy style of assurance with which he offers his advice gives him an air of charlatanism, which is in some measure forgotten by the quality of his occasional remarks, and the very rational instructions which are generally founded on them. We cannot, however, pledge our regular authority to sanction every thing which the author has advanced. His work is chiefly practical; but he sometimes dabbles a little in pathology, and we cannot say with the best success. His pretensions, however, it is to be remembered, are not great; and where he has confined himself to his own peculiar sphere, he has acquitted himself well. He is obviously a man who thinks that one of the best possible things in this nether world is a good dinner, and a good appetite to enjoy it: and it is not consistent with the wonted arrangement of things, that all good qualities should coexist in the same single person. For,

> "When a roast or a ragout,
> And fish and soup by some side dishes backed,
> Can give us either pain or pleasure; who
> Would pique himself on intellects, whose use
> Depends so much upon the gastric juice?"

We think, in fine, that Apicius Redivivus, or Dr Kitchiner, had early discovered that he came into this breathing world for the grand purpose of providing enjoyments for the noble sense of taste. It is needless to add, that he has fulfilled his vocation well. With unfeigned regard we recommend his labours and services to all and sundry lovers of good eating, whether that faculty develope itself in the bosom of the pursy Alderman, or the more delicate person of the fashionable Exquisite.

II.

1. *Facts and Documents relating to the Establishment of the Ophthalmic Hospital.* 8vo. pp. 29. London, printed by L. Harrison, 373, Strand, 1821.
2. *First Annual Medical Report, detailing the Cases of all the Pensioners labouring under various Diseases of the Eye, &c.* By Sir William Adams. 8vo. London, 1819.
3. *Report submitted to His Royal Highness the Commander-in-Chief, upon the Subject of the Out-Pensioners of Chelsea Hospital, &c. &c., with an Appendix.* 8vo. London, 1819.

It has been our duty to submit to the profession, within a short period, the result of a Parliamentary Inquiry into two medical subjects of very serious importance—Plague and Epidemic Fever: We are now to lay before it a third, not perhaps of such universal interest, but certainly of sufficient consequence to justify us in bestowing some time and research upon it—we mean the investigation of Sir William Adams's claims to a national reward for his new and successful methods for the cure of Ophthalmia, and for its eradication from our armies. The person solely interested in the pecuniary part of this inquiry has embodied his claims in the pamphlet, the title of which stands at the head of this article; and although certain wiseacres have assumed the very convenient doctrine, that a Book is not published if it be not sold; yet, as we are informed that a large impression of this paper has been distributed to the Members of both Houses of Parliament, and gratuitously circulated through various channels, and since, to our knowledge, copies are in the hands of many of our readers, we shall take the liberty of considering it as a legitimate subject of criticism. Without entering into the question of the delicacy of putting forth such a statement while a solemn investigation was pending, we shall endeavour, now that the Committee has closed its labours, to present to our readers such a general outline as may put them in possession of the merits of the case. On one point only we shall be silent, since it refers to the case of an officer that has already undergone public investigation before a competent tribunal. Indeed, did we state that case as the writer of the pamphlet has allowed himself to do, we are not certain that we might not bring ourselves within the penalties of the law of libel. Of one thing, however, we are quite positive, that no man, possessed of one spark of generous feeling, could have interwoven in the texture of his story an episode, which, devoid of any intrinsic value for his purpose, must necessarily have inflicted a most serious injury upon the character of an absent individual.

As Sir Willam Adams's statements are somewhat diffuse and declamatory, we shall not follow the exact arrangement of "the Facts and Documents," but shall divide them into—1*st*, the detail of his introduction to, and connexion with, the army; and, 2*dly*, the collateral matter which he brings forward. It appears, then, that Sir William Adams, while practising at Exeter in 1809, had restored several blind pensioners to sight who had laboured under the granular stage of ophthalmia, and had, as he alleges, been discharged from the army *as incurable*. This achievement very luckily came to the knowledge of the general officer commanding the district, and he stated the circumstance to the proper authorities, who, in 1811, anxiously solicited Sir William Adams's assistance, and admitted him to various trials in the military hospitals. To this very natural course of events we have nothing to object; it is altogether in keeping with the usual routine on such occasions, as may be seen more at large in the writings of those disinterested individuals who daily favour the world with details of the various lucky coincidences, by which their transcendent merits have, for the benefit of mankind, been brought to light.

We proceed to matters supported on less questionable authority. Early in 1812, Sir William, by the orders of the Adjutant General, had an interview with the Army Medical Board of that day; on which occasion, as he informs us, "he did not deem it necessary to make any specific stipulations, but proceeded freely and fully to communicate to them his opinions and practice for the radical cure of the Egyptian ophthalmia." We must here protest "in limine" against the term "Egyptian ophthalmia;" and, whenever our pen may slide involuntarily into the appellation, we beg to be understood as meaning purulent ophthalmia in its most violent form. The Army Medical Board, it appears, did not receive Sir William with that grateful enthusiasm which the originality and importance of his propositions in his opinion so warmly merited; and, towards the close of the year, they received from the Adjutant-General what is technically called a "rowing," which the Pamphleteer prints verbatim with very laudable accuracy, making only the trifling omission of the whole of the explanatory circumstances which the Board offered in their defence. In 1813, Sir William, convinced of the blindness and prejudice of military medical men, was determined that the business should be taken out of the hands of such partial judges; and accordingly, he applied for a Committee of civil practitioners. The Report of the Committee was by his account so favourable, that it was resolved by the Commander in Chief, Secretary of State, and Secretary at War, to make a simultaneous effort *entirely to eradicate the Egyptian ophthalmia from the army, and from the kingdom*, by the adoption of the specific plans which our oculist had submitted for their approval—"this highly contagious malady having been widely disseminated among all classes of society, through the medium of the dismissed soldiery." This most promising project was, if we are to believe the Pamphleteer, entirely frustrated by the present Director-General of the Medical Department of the Army, Sir James M'Grigor, who, in a letter written very shortly after his appointment, observed, "that of the contagious disease, there then existed but a few cases in the neighbourhood of Plymouth, and that he trusted the disorder would very soon be eradicated from the army." Not content with this, he went so far as to assert, "that he was convinced he could select from the service medical officers perfectly equal to the cure of the diseases of the eye, where a cure could be effected;" and he concluded by stating. "that he was of opinion the establishment proposed by Sir William Adams was by no means required, as its objects could be obtained without incurring any further expense." His Royal Highness the Commander-in-Chief, to whom this letter was addressed, had, it appears, some confidence in the integrity, zeal, and experience of the man who had attended the Indian Army across the Desert to Egypt;—who had studied ophthalmia in its cradle;—who, at the head of the Hospital Staff of the Duke of Wellington, had established on its present basis the professional character of the medical officers of the British Army;—and who owed his high appointment solely to his own merit. He therefore contented himself with transmitting the letter of that officer to the Right Honourable the Secretary at War, with the very significant observation, "that it appeared quite conclusive as to the expediency of creating any new establishment for the ophthalmic disease." The Right Honourable Secretary, however, held a different opinion; and, in 1817, he built and established an Hospital, and placed it under the charge of Sir William Adams. For his labours at this establishment, and for his exertions on behalf of the suffering out-pensioners of the army, Sir William founds his claims to reward.

Let not our readers suppose that this is a subject of individual interest alone: We state it as our conscientious conviction, that the dignity and honour of the medical profession at large is implicated; and that, if the extraordinary countenance now given to appeals to Parliament be held up as a precedent, effrontery and intrigue may engross the honours due to unassuming merit; while persons who, both by education and habit, are of all others least qualified for the task, may, at some future period, be selected to distribute the rewards of professional excellence. Indeed we should suppose that the very individuals who, under such an arrangement, might find themselves placed in the situation of judges, would, if any feeling of consistency existed in their breasts, be the first to acknowledge their own incompetency to form a just or accurate opinion on medical subjects; for although they may very laudably promote, as individuals, the interest of a *protégé*, they run the risk of disgracing themselves when they proceed to vote away the money of the public. Should such a person be, by accident, named to such an office, we have no hesitation in asserting, that he would owe it to his character to reject the appointment; and, in our mind, the strongest argument "*a priori*" against the claims of an appellant, would be his submitting them to an arbitrator so circumstanced.

But to return to the case immediately before us, we are inclined to give full credit to Sir William Adams for having cured some pensioners at Exeter in 1809; but that they were all deemed *absolutely incurable* by the Army Surgeons, we are by no means disposed to admit, and for this simple reason. About the period in question, we were in the very heat and bustle of a sanguinary contest; our armies were with difficulty supported abroad; and at home we were actually struggling for political existence; the demands for soldiers to supply the continued expenditure of the service were large and insatiable; and, in discharging *inefficient* men, to make room for fresh recruits, the question was not, whether the former were curable of their several diseases, or to what extent they were susceptible of relief by further treatment?—but it was, whether they might, by *any* treatment, be rendered speedily fit for the purposes of *actual warfare?* The finances of the country were barely sufficient to support the effective bayonets, without also keeping upon full pay, with all its contingent expenses, invalids who were never likely to add to the strength of the army in the field, whatever they might do upon paper. This obvious fact, we think, is quite conclusive upon the point.

It was on the subject of the men cured at Exeter that Sir William Adams and his friend and master Mr Saunders first quarrelled; the memorable letters that passed between them are still extant "in excellent Italian;" but we can only refer to them.† Suffice it to say, that Sir William wished to identify himself with the discoveries of his master; to offer their joint services to the Government; and to divide the profits. He also ventured to recommend, that his intended work on Diseases of the Eye should not be published without previous communication with Government, with a view to reward; the suggestion, however, was instantly met in a spirit of indignation to which the equanimity of Mr Saunders's mind was seldom subjected;—he wholly rejected the idea. Mr Saunders died in February 1810; his posthumous work was published by Dr Farre in December 1811; and, early in January 1812, a copy of it was officially transmitted to the Army Medical Board of that day. In the *following March*, Sir William Adams had, by authority, an interview with the Board; and, on that occasion, he informs us, "that he freely and fully communicated his opinions and practice for the radical cure of the Egyptian Ophthalmia." And what was the mighty secret?—Turn we to the note at page 94 of Mr Saunders's work, and there we find it!—mystified, however, by Sir William, inasmuch as he proposed to remove the granulations by the *knife*, while his teacher effected the same purpose by the scissars!!

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† Special Report of the General Committee of the London Infirmary for Diseases of the Eye. London, 1815.

The Army Medical Board, who had all sorts of proposals from aurists, oculists, rupture-curers, and venders of quack-medicines daily submitted to them, made a Report, which, under all the circumstances, we contend, was infinitely more favourable than Sir William's plan deserved. They stated "that it was plausible, so far as he had explained himself." Far be it from us to detract from the merits of Mr Saunders. To that eminent and lamented individual, British Ophthalmic Surgery is under the greatest obligations; and his memory must ever be cherished in grateful recollection by all who can appreciate the union of skill and ability so happily blended in him. But it should be remembered that the existence of granular lids in affections of the eye was known from the earliest periods of physic of which we possess any record; and their removal by excision and escharotics recommended by the oldest authors of the Greek, the Roman, and the Arabian schools. ‡ The leading error with regard to these granulations has been, the supposition that they were *solely* the product of Egyptian ophthalmia; they, on the contrary, result from all protracted inflammatory affections of the conjunctiva, from whatever cause they may originally have proceeded, whether congenite, scrophulous, gonorrhœal, or catarrhal, and under whatever form they may have extended themselves. Their incipient or villous stage is constantly to be observed in cases of fistula lachrymalis; and their complete formation is by no means a rare occurrence from gunshot wounds, and other injuries in the neighbourhood of the eye. Where insulated or pendulous, they may often be advantageously removed by a cutting instrument; but in an infinite majority of cases, they are best treated by the mildest and simplest means, without the use of either knife, scissars, or lancet. To Mr Saunders, beyond any doubt, is due the merit of having *first, among modern surgeons, publicly taught the treatment by ex-*

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‡ We reminded our readers, in our last Number, of Sir William Read; and we observe that the Committee of the House of Commons have taken especial notice of him, when discussing Sir William Adams's claims to originality. The merits of the Knight of Queen Anne's days are noticed by the Spectator (No. 547.); but we believe his work has never before been so highly honoured.

cision, which he did so far back as 1809. When he first adapted that practice to the purulent form of ophthalmia, is unknown; but assuredly, if his valuable life had been spared, he would have greatly modified it; for, like other professional proposals, whether original or revived, it has been undergoing progressive improvements, and it has now fallen greatly into disuse among surgeons in general. Strange to say, it has been virtually abandoned by Sir William Adams himself, who has now reverted to the use of sulphat of copper, the employment of which, as an escharotic, forms the basis of his practice, *and is enforced in the standing orders of that very hospital, which was erected for the express purpose of promulgating his new and successful practice by the knife to the medical officers of the army!!!* Thus then, after having held up these gentlemen as ignorant and inefficient, and having pretended to open a school for their instruction, he has adopted a severe and comparatively inefficacious modification of their established practice; and, with characteristic modesty, he claims a reward, in 1821, for a mode of treatment which they have uniformly been in the habit of employing since 1809. While holding out one mode of practice as a bait for public applause, he pursues another in the establishment erected for him by the public money—an establishment where, by the by, while he has professed to *teach*, he has obviously practised to *learn*. On a par with this is his continuing to perform extraction of the cataract, although he had written a goodly octavo to decry that operation.

Although the author of the pamphlet alludes only to *one* experiment (p. 1.), yet it appears that no less than *five* were conceded to him, under circumstances infinitely more favourable than have ever been granted to established military surgeons; and although we are most willing to make every allowance for the "esprit de corps" which may have dictated the Reports of both parties, we must confess that the pamphlet which is named at the head of this article (No. 3.), carries to our minds a conviction that Sir William Adams failed most lamentably in his last and greatest trial. We cannot afford room to enter further into this part of the subject; but shall advert to the grand "simultaneous effort" of the oculist, and the Secretary of State, and the Right Honourable the Secretary at War, entirely to banish Egyptian ophthalmia from the kingdom and army! It seems to have consisted of two plans, equally feasible and meritorious. Whenever the incipient disease was detected, the patient was to be placed upon a course of full vomiting for several hours, by which means the activity of the blood-vessels would be effectually lowered, without removing from them the vital fluid—a circumstance of great national importance, considering the vast demand for that article that the unsettled state of Europe was likely to occasion; and in cases where the disease had taken deep root, and those "vile" granulations were discoverable, the pensioners were to be called up, and the conjunctiva was to be "shaved home to the tarsus," or cauterized with sulphat of copper, as the case might require; by which means the granulations were not only to be removed, but their future growth was to be effectually prevented. As the hospital erected in the Regent's Park for the promulgation of the "new and successful methods," could not conveniently hold all the pensioners, they were to be called up by degrees, after the manner proposed by Captain Bobadil for destroying the enemy's army—"twenty more, cure them—twenty more, cure them too—till at last the whole fifty thousand should be fairly cured by computation." To make this plan complete, we should beg to offer one suggestion. It is acknowledged upon all sides, that prevention is better than cure; and it is ascertained, that the gonorrhœal ophthalmia of new born infants is capable of propagating a most violent and wide-spreading disease. Now, might not the pensioners' wives be had up, and might not, by a dexterous removal of mucous membrane, all chance of their bringing forth diseased children be effectually prevented? This, however, we admit, is but a speculation; we shall, therefore, not much insist upon it, but turn to facts supported by experience.

It so happens, that some very curious and important information was elicited by the professional gentlemen who were despatched at the expense of Government on this most hopeful errand. Among the families of nearly three thousand pensioners, dispersed over England, Ireland, and Scotland, they did not find *a single instance* in which ophthalmia had been communicated:—nay, there was only one solitary case discovered in which any sequelæ of disease of the eye, under a suspicious form, were found to exist; and that was in the instance of a wife who had many years before caught the complaint, at the same time with her husband, at an infected barrack in Kent. Purulent ophthalmia is indeed a disease of barracks. Whenever men have been crowded together in close, ill-ventilated rooms, and their eyes have been exposed to the application of morbid discharges from mucous surfaces, especially by the medium of towels or bedding, there the affection has been propagated with surprising rapidity. But so little has this dissemination depended upon *one* specific discharge alone, that whether it has proceeded from ordinary catarrhal ophthalmia, from the factitious disease generated by depraved soldiers, from gonorrhœal matter, or from any other source, ophthalmia in a severe purulent form has been produced, many eyes have been destroyed, and nothing has prevented still more extended ravages, but a system of separation and dispersion.

Our limits do not allow us to enumerate the various sources, endemic, epidemic, sporadic, factitious, and even epizootic, from which ophthalmia has sprung, and hereafter may be disseminated among bodies of men living in the unrestrained intercourse of military life: they are such as to set at nought all schemes for extermination. We may, however, remind our readers of some instances which have occurred prior to the Egyptian expedition, and which only required concentration of subject to have spread with equal virulence and rapidity. In Ireland, a severe form of purulent ophthalmia is stated by Mr Power to have existed from time immemorial among the peasantry of certain districts. In England, an epidemic ophthalmia prevailed in Berkshire in 1778, and spread to the soldiers; at which period it was known under the name of the "ocular disease." In 1797, a very severe ophthalmia appeared in one of the ships of the squadron off Brest.† In 1799, catarrhal ophthalmia prevailed in Germany, which, according to Assalini, was precisely the same as he afterwards witnessed in Egypt; but the disease has never been so violent in England as since the enormous increase of our fleets and armies, especially since the return of the *troops from* Egypt; and it is a very extraordinary fact, that it was not till a lapse of six years after that event, that it made its appearance, and then it broke out, not in a regiment that had served in that country, but in a corps entirely composed of Irish recruits. We need scarcely tell our readers, that the French surgeons deny that this disease is contagious; we, however, are convinced that it is so, by the medium of the *purulent matter* applied to the parts, although some individuals among us, from experiments tried on themselves, are of a different opinion: But we believe no pathologist ever dreamt that the contagious quality existed in the *granulations*, if we except Sir William Adams. If his opinion was really so, it must be confessed that he adopted a most singular system of carrying into effect his grand "simultaneous effort;" for, by his Report it appears, that instead of collecting the pensioners with *granular lids*, who, according to him, "were propagating this dreadful scourge throughout the kingdom," he let them propagate it at their leisure; and selected numerous cases for operations, which he doubtless performed dexterously, but which were of no conceivable importance to the army or the kingdom, except indeed he may be of opinion that closed pupil, cataract, and inverted lids, are contagious also.

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† During the proceedings of the Committee, an instance was mentioned in the House of Lords, by the Marquis of Lansdowne, in which epidemic ophthalmia had recently broken out on board a French slave ship, where it had deprived many of these unfortunate people of vision, and had spread so extensively among the crew, that only one of them was left with sight to bring the ship into Guadaloupe.

Before examining the "Documents and Claims" of Sir William Adams, we shall briefly advert to two points upon which he particularly dwells. The *first* is the Report of a Special Board, which was assembled in the year 1810, to consider and determine upon the means of preventing and curing the ophthalmia in the army. This Board, it appears by Sir William's account, "never mentioned the third or granular stage, upon the removal of which entirely depends the radical cure of the malady, and the *prevention of contagion.*" We apprehend that no possible blame can attach to this Board for the omission here stated; because it is obvious that granulations have nothing to do with the propagation of the disease; * and it is not a little curious, that the only proof Sir William attempts to offer on the point, is a letter from a Lieutenant in the Navy.

The *second* subject upon which Sir William Adams lays considerable stress is, that in three or four months after the date of Sir James M'Grigor's letter to his Royal Highness the Duke of York, on the subject of the disease at Plymouth, ophthalmia appeared in the Army of Occupation in France, which he very judiciously endeavours to prove was entirely owing to the neglect of the Director-General. Now Sir William Adams, among many false deductions, has committed two leading mistakes in point of fact in this business. In the *first* place, the disease proceeded from causes entirely beyond human control, and first appeared in a catarrhal, and not in a purulent form; and, in the *second* place, it was not *prevalent* in the army, for it was confined to four corps only. *Lastly*, this epidemic afforded most triumphant proof of the superiority of ophthalmia surgery in the British army; for, by returns laid before the House of Commons it appears, that, of 2422 cases, 56 only were invalided, of whom no more than 10 men sustained the total loss of vision; and it is highly probable that, of those who were invalided and pensioned, several would not have been lost to the service under a different state of public affairs.

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* Persons with granular lids are certainly more susceptible of irritation than others; but it by no means follows, that every attack of inflammation in them is necessarily purulent and contagious. Nor are granulations a *necessary* consequence of inflammation. On the contrary, if proper means are used at first, they do not form; and they often disappear spontaneously, after they have existed for a considerable time.

We now come to the Second Section of the "Facts and Documents," with which we shall not long detain our readers. Under the head of expense caused by ophthalmia, he estimates the sum paid at 129,000*l*. We shall not stop to inquire how much of this is paid for wounds and length of service, and how much *solely* for ophthalmia; but shall at once turn to what at first sight might be supposed an authentic document. (Document 2d, p. 23). The history of this return is curious. It appears that during a tour of inspection in Ireland, one of the medical assistants met with 1800 men in whose certificates of discharge various ocular diseases were inserted. † Of the men who really had diseases of the eye unfitting them for military duties, he considered 300 as incurable, and between 4 and 500 as susceptible of cure or relief;—of course, upwards of 1000 pensioners remained unclassed. A man possessed of some little knowledge of military matters might have hesitated about the actual state of these persons; but Sir William Adams takes a very summary method of disposing of them; and they are by a "coup de plume" represented to have "*recovered their sight since they were discharged and pensioned as incurable!!*"—He might with the same ease, and as much justice, have represented them as members of the Bench of Bishops.

His next financial Document purports to be a return of men whose pensions were saved in consequence of their treatment by him. (Document 5th, p. 28.) But what will our readers say when we inform them, that one of these men whose pension is stated to have been saved, died in the hospital?—some were militiamen, who had no title whatever to pensions; and others were unfortunate persons, who, by military crimes, had forfeited all their claims!!—and yet the writer of these self-refuting Documents presumes to obtrude them on the British Parliament as authentic! We were prepared for much manœuvre on the subject of the ophthalmic inquiry; but we confess this exceeds our preconception, and almost our powers of comprehension.

We shall now turn to the pecuniary claims of Sir William Adams, (at p. 17.) It seems that he, or his secretary, was very much puzzled for a parliamentary precedent; they had, to be sure, the case of Mrs Stevens, of eggshell memory, which for *value and originality* seems to be pretty much in point: But this would not do; and therefore, after much research, they modestly fixed upon the case of Dr Jenner!!! Do not let our readers suppose we are *hoaxing* them; the fact is precisely as we state it; and the demand is even less extravagant than was expected. The members of the Committee, however, were not convinced by the very clear and connected chain of argument advanced on this point; they equally scouted the oculist's claims to originality and resemblance to Dr Jenner; but, in consideration of his loss of time for four years, and of his labours at the hospital (which had not before been paid for), they, on a division, recommended to Parliament to grant him a sum of 4000*l.* The consideration of this point is deferred till a future session; but it is recommended that the hospital for the "new and successful methods" should be abolished. We were in hopes that the proceedings, as well as the Report, would have been printed for the use of the public; but that still remains a disputed point, some members alleging that it would increase expense, while others suppose that such a light would be thrown on the subject as would effectually prevent any farther demands upon the public purse; and that 1000*l.* paid to the printer, would eventually save treble the sum to the people.*

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† In discharging men, army surgeons and commanding officers were formerly in the habit of inserting all the diseases that the soldier had suffered from during any period of his military service, which might increase his claim to pension, if otherwise a deserving object.

Sir William Adams ventures to assert (p. 19.), that the periodical medical press of this country is under undue control, and has been systematically hostile to him. The assertion, we believe, is most unfounded. For ourselves, we have on various occasions criticised the writings of this gentleman freely, and we have conscientiously opposed what we have always considered as a great delusion, viz. his claims to originality, and to superiority over all his contemporaries. The disclosures recently made, will do more to confirm the justice of our opinion than any thing we can at present offer. We shall not presume to decide whether the sum recommended is more than an adequate compensation for Sir William Adams's time and labour; but this we shall assert, without fear of contradiction—that no pecuniary reward could remunerate a man of feeling for the *exposé* which has been presented to the profession. When reviewers cease from troubling, and pamphleteering oculists are at rest—when the courtly taunt, the blustering assertion, and the indignant reply of contending claimants are alike forgotten—these proceedings will remain a salutary lesson to those who, filching from the fair fame of others, may hereafter submit their illusory claims to the tribunal of the public; while they may tend in some degree to moderate the self complacency of non-professional men, who conceive themselves intuitively competent to decide on grave professional subjects.

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* Report in the "Times," of the 11th July.

III.

1. *An Account of the Rise, Progress, and Decline of the Fever lately Epidemic in Ireland; together with Communications from Physicians in the Provinces, and various Official Documents.* By F. BARKER, M. D. &c. &c., and by J. CHEYNE, M. D. &c. &c. 2 vols. 8vo. Dublin, 1821. pp. 500, and 387.
2. *An Historical Sketch of the Causes, Progress, Extent, and Mortality of the Contagious Fever Epidemic in Ireland, during the Years* 1817, 1818, *and* 1819; *with numerous Tables, Official Documents, and Private Communications, illustrative of its General History, and of the System of Management adopted for its Suppression.* By WILLIAM HARTY, M. B. &c. 8vo. Dublin, 1820. pp. 220 & 282.
3. *Medical Report of the Hardwicke Fever Hospital, for the Year ending on the* 31*st March* 1818; *including a Brief Account of an Epidemic Fever in Dublin. (From Vol. II. of the Dublin Hospital Reports.)* By JOHN CHEYNE, M. D. 8vo. Dublin, 1818. pp. 144.
4. *Medical Report of the Fever Hospital and House of Recovery, Cork Street, for the Year* 1816, *with Observations on the succeeding Epidemic, and the Treatment adopted for its Cure; illustrated by Cases lately admitted into that Hospital: To which are added, Observations on Apoplexia Cephalitica, also illustrated by Cases.* By WILLIAM STOKER, M. D. &c. &c. 8vo. Dublin, 1818. pp. 71 & 15.
5. *Medical Report of the Fever Hospital and House of Recovery, Cork Street, Dublin, for the Year ending* 4*th January* 1819. By RICHARD GRATTAN, M. D. 8vo. Dublin, 1819. pp. 123.
6. *Medical Report of the Fever Department in Steeven's Hospital, containing a Brief Account of the late Epidemic in Dublin, from September* 1817 *to August* 1819. By JOHN CRAMPTON, M. D. &c. 8vo. Dublin, 1819. pp. 63.
7. *Observations on the Condition of the Middle and Lower Classes in the North of Ireland, as it tends to promote the*

Diffusion of Contagious Fever; with the History and Treatment of the late Epidemic Disorder, as it prevailed in an extensive District of that Country, and a Detail of the Measures adopted to arrest its Progress. By Francis Rogan, M. D. 8vo. London, 1819. pp. 159.

8. *Diss. Med. Inaug. De quibusdam Febris Epidemicæ sequelis quæ anno* 1818 *Eblanæ grassata est.* Auct. Thoma Cuming. 8vo. Edin. 1819. pp. 72.
9. *Diss. Med. Inaug. De Febre Epidemica, quæ annis* 1817–1818 *apud Monaghan ejusque vicinitatem, maxime sueviebat.* Auct. Gulielmo Temple. 8vo. Edin. 1819. pp. 17.
10. *Diss. Med. Inaug. De quibusdam Febris Epidemicæ varietatibus quæ annis* 1817–18–19 *Eblanæ grassata est.* Auct. Joanne Crawford. 8vo. Edin. 1820. pp. 50.
11. *A History of the Epidemic Fever which prevailed in Bristol during the Years* 1817, 1818, *and* 1819, *founded on Reports of St Peter's Hospital and the Bristol Infirmary.* By J. C. Prichard, M. D. 8vo. London, 1820. pp. 112.
12. *A History of the Epidemic Fever which prevailed in Bridlington and the Neighbourhood, in the Years* 1818 *and* 1819. By Humphry Sandwith, Surgeon, Bridlington: *Also, Observations in Medicine and Surgery.* By Thomas Sandwith, Surgeon, Beverley. 8vo. London, 1821. pp. 172 & 144.
13. *A Practical Treatise on the Efficacy of Blood-letting in the Epidemic Fever of Edinburgh, illustrated by numerous Cases and Tables, extracted from the Journals of the Queensberry House Fever Hospital.* By Benjamin Welsh, M. D. 8vo. Edinburgh, 1819. pp. 208 & 126.
14. *Dissertatio Medica Inauguralis de Febre continua quæ nuper in hac urbe Epidemica fuit ex exemplis apud Nosocomium Regium tractatis, deducta.* Auctore Roberto Christison. 8vo. Edin. 1819. pp. 60.
15. *Diss. Med. In. De Febre Contagiosa Crifana annis* 1817 *et* 1818 *sueviente.* Auct. Georgio Taylor. 8vo. Edin. 1819. pp. 36.
16. *Diss. Med. In. de Febre continua ut sese habuit in Nos. Reg. Edin. cubiculis clinicis in aestate anni* 1820, *curante J. Home, M. D.* Auct. Merione M. Moriarty. 8vo. Edin. 1821. pp.

17. *Diss. Med. Inaug. De Causis Febris Epidemicæ nunc Edinburgi grassantis.* Auctore Eduardo Turner. 8vo. Edin. 1819. pp. 45.

18. *Practical Observations on the Treatment, Pathology, and Prevention of Typhous Fever.* By Edward Percival, M.B. &c. &c. 8vo. London, 1819. pp. 156.

19. *A Succinct Account of the Contagious Fever of this Country, exemplified in the Epidemic now prevailing in London; with the appropriate Method of Treatment as practised in the House of Recovery: To which are added, Observations on the Nature and Properties of Contagion, tending to correct the Popular Notions on this Subject, and pointing out the Means of Prevention.* By Thomas Bateman, M.D., &c. &c. 8vo. London, 1818. pp. 177.

20. *Observations on the Prevention and Treatment of the Epidemic Fever at present prevailing in the Metropolis, and most parts of the United Kingdom: To which are added, Remarks on some of the Opinions of Dr Bateman and others on the same Subject.* By Henry Clutterbuck, M.D. 8vo. London, 1819. pp. 299.

21. *A Practical Illustration of Typhus Fever, of the Common Continued Fever, and of Inflammatory Diseases.* By John Armstrong, M.D., &c. Third Edition. 8vo. London, 1819. pp. 566.

22. *Remarks on the Pathology and Treatment of Typhous Fever.* By Albert Henry Callanan, M.D. 8vo. Cork, 1817. pp. 102.

23. *A Treatise which obtained the Prize on this Question, "What are the Symptoms which indicate or contraindicate Blood-letting in Fever, whether Intermittent or Continued, designated under the Terms Putrid or Adynamic, Malignant or Ataxic?" Proposed by the late Academical Society of Paris for the Meeting of* 1812. By J. Van Rotterdam, Professor of Therapeutics and Materia Medica in Ghent. Translated from the French by J. Taylor, M.D. 8vo. London, 1818. pp. 265.

24. *Prospectus or Introduction to a Practical Dissertation on the Use and Abuse of Blood-letting in Fever and Inflammation,*

and in all Diseases connected with them: Together with a practical Inquiry into the Nature and Origin of Pulmonic Complaints; as also those Derangements of the Liver and other Internal Organs, usually but erroneously termed Nervous, Bilious, &c. By Adam Dods, M. D. 8vo. Worcester, 1820. pp. 25.

From the prefixed catalogue, which is probably not complete, it will appear, that our successors will have no cause to complain of us, as we do of our predecessors, that an important epidemic has been left without a sufficient record. But, from the very abundance of excellent materials, we find it impossible to do justice to each of the writers to whom the profession is obliged, without trespassing upon the patience of our readers, in regard to a subject which, to many of them, has already seemed to occupy too much of our attention.

The works before us may be divided into those which describe the fever as it occurred in a particular place, under the observation of the author; those which attempt to collect a general history of its progress and varieties, from the comparison of numerous documents; those which treat of the subject of fever in general; and those which treat of the effects of a particular remedy.

In the British empire, the disease began and prevailed most extensively in the sister island; and it is in that country that it has met with the most indefatigable historians. In collecting materials for their national work, if we may so call it, Drs Barker and Cheyne seem to have had the support of Government; and the manner in which they have performed their task shows how well they deserved it. We may admit that, if they had taken more time, they might have accumulated more facts; and that they might have condensed those facts which they procured into a smaller space, and might often have avoided repetition. But we well know the difficulty of condensing and arranging materials so multifarious and heterogeneous, so as to do justice both to the writers who have taken pains to communicate them, and to the public for whom they are intended. The delay which a more perfect production would have necessarily occasioned, would have been attended with greater loss than the evils of repetition, which forms the only just ground of complaint; and, after all, as it is desirable that each correspondent should speak for himself, it was perhaps not to be avoided.

The work of Drs Barker and Cheyne consists of two respectable octavo volumes, which are divided into four sections. The

First contains a historical sketch of the fevers which have been epidemic in Ireland during the last and present centuries. The Second contains communications of considerable length from the four provinces relative to the late epidemic. The Third Section contains a medical account of the fever as it appeared in each of the provinces. The Fourth Section, which occupies the whole of the second volume, contains the reprint of Reports and various Official Papers, which the Editors have judged deserving of being handed down to posterity.

From this view of the contents of these volumes, it will appear that the Editors are responsible chiefly for their judgment in devising the plan of the work, and in selecting the materials, and for their skill in composing the first and third sections. Their first duty was evidently to collect and reprint every official document relating to the history of the rise and progress of the fever, and the means employed to counteract it, with an account of the effect of these means. In a work written under the immediate sanction of Government, we are well aware that nothing having a tendency to censure its measures can be expected to be inserted; hence it probably is, that we find Drs Barker and Cheyne confining themselves to such public documents as emanated from Government itself; and hence a considerable blank is left in the history of the rise and progress of the disease, which is however supplied by Dr Harty's publication. The principal documents appended to the official publication are, the Reports from the Select Committees of the House of Commons on the Fever in Ireland, presented on the 9th May 1818 and 17th May 1819, with the Reports of the temporary medical inspectors of the provinces annexed to the latter. We have also the Act of Parliament to establish Fever Hospitals, 30th May 1818; the papers relative to the Formation and Dissolution of the Board of Health; the Circulars addressed, 3d October 1818, to the Governors of Hospitals in Dublin, and Dispensaries in the vicinity, with the answers; the Act of Parliament for preventing contagious diseases in Ireland, and the establishment of a General Board of Health. There are also some other papers relative to the establishment of Soup Kitchens, and the providing for the relief of the indigent sick at Waterford and Ballytore. At first, we were disposed to think that this Appendix might have been shortened, by the omission of the long Appendixes to the Report of the Select Committee of the House of Commons of May 1819; especially as a fuller account of the fever, as it appeared in each of the provinces, is inserted in the first volume. But, upon more mature consideration, we rather regret the omission of the documents appended to the Parliamentary Report of 1818.

For the extracts printed from the longer communications from physicians in the provinces, the Editors are responsible for their judgment in selection. From Munster, those admitted are from Drs Lyon and King of Tralee, Rev. S. Grady of Carrick-on-Suir, Dr Bracken of Waterford, and Drs Halloran and Milner Barry of Cork; Connaught, from Sir Thomas Moriarty of Roscommon, Mr Brady of Carrick-on-Shannon, Dr Verdon of Boyle, Dr Fawpett of Ballina, and Dr Macartney of Morimore; Ulster, from Dr Ryan of Armagh, Dr Black of Newry, Dr Young of Ballymona, and Dr Murray of Cavan; and Leinster, from Dr Burk of Dundrum, Dr Davis of Ballytore, Dr De Renzy of Carnew, and Dr E. G. Ryan of Kilkenny.

To have printed at length, or even in the form of extracts, all the answers received to their circular queries, would have extended the work to an enormous length; and, therefore, the Editors have condensed, in the third section, all the information received from their other correspondents, keeping those of each province separate. This part of their work is executed with great ability, and is highly valuable in many points of view. It presents us with "a cloud of witnesses" upon every point.

The first section is that of the work of which the Editors are more especially the authors. It is divided into two parts; the first allotted to the history of preceding epidemics in Ireland; and the second to that of 1817, 1818, and 1819; and, in regard to this portion of their work, we can only say that, in our opinion, the Editors have executed, in a manner most creditable to themselves and useful to their country, all that they intended to do.

> "Resolving, as much as in their power, to exclude all speculative matter, the Editors have confined themselves to a statement of facts and of deductions which, they trust, no attentive and unprejudiced observer, enjoying advantages similar to those which they possessed, can call in question or dispute, and to an enumeration of such plans only as were the basis of measures adopted either by Government, or of communities of the people; their sole object being to present a plain record of all the more remarkable circumstances connected with the origin, diffusion, and decline of the Epidemic Fever in Ireland."

The parallel work of Dr Harty is also extremely valuable; and, when we consider that it is the production of an individual, with the voluntary assistance of his medical friends, we have no hesitation in saying that it evinces a wonderful degree of energy and ability in its author. At the same time, it must be admitted, that an independent writer, if we may use the expression, enjoys some advantages over those who, assisted by official countenance, are also shackled by official restraints; and to this we would in part, though not altogether, ascribe the animated style which pervades Dr Harty's volume. While Drs Barker and Cheyne suppress as much as possible their own opinions, and endeavour to act the part of impartial historians, Dr Harty everywhere speaks his mind boldly and decidedly, without "mincing the matter." At this distance, we are, of course ignorant of the private history of many things alluded to by Dr Harty; but it is evident that he writes under some feeling of disappointment, and, perhaps, not without cause. With the proceedings of Government in regard to the fever, especially under the Secretaryship of Mr Peel, he is particularly dissatisfied; and his whole work breathes the true spirit of an Irish Patriot, keen in his country's cause, and alive to its misfortunes. In short, Dr Harty's may be considered as the opposition history of the late epidemic.

Although professedly having the same object in view, having adopted nearly the same general plans, Dr Harty has filled up the detail very differently from Drs Barker and Cheyne. Even in the choice of documents worthy of preservation, we are struck with the total want of coincidence of opinion; for although they consist, the one of 290, and the other of 390 pages, there are scarcely 20 common to both. Both works are therefore necessary to complete the history. In particular, we are indebted to Dr Harty for his communication of the proceedings of the Sub-Committee of Health to the Association for the Suppression of Street-begging in Ireland, which are altogether passed over in silence by Drs B. and C., and which we consider uncommonly valuable in point of fact, and highly interesting historically. We are also indebted to Dr Harty for the preservation of a document relating to the epidemic in our own country, from Aberdeen, with which we were previously unacquainted. He has also inserted communications on the state of the prisons in Ireland, and Dublin in particular, before and during the epidemic. The tables annexed to Dr Harty's work are particularly full and valuable. Three of them exhibit the monthly returns of admissions and deaths in hospitals; and four, entitled General Views of the Epidemic, exhibit the principal facts relative to the disease, an account of the probable population of each county and chief city, and of the probable origin, extent and mortality of the epidemic, the period of its commencement and greatest prevalence, its duration and state at the end of June 1819, with the authorities on which these statements are made. The prefixed map of Ireland, on which the dates of the commencement of the fever in the principal towns is marked, appears to us by far the best mode of exhibiting the progress of any epidemic disease. We would recommend to the Indian

Government to order such a map of the progress of the Cholera to be prepared by the Boards of the different Presidencies. Dr Harty also illustrates his documents with numerous notes.

The body of Dr Harty's work is argumentative as well as historical. It contains, besides a historical sketch of the commencement, progress and duration, of the epidemic in the four provinces of Ireland; an inquiry into its extent and mortality; a particular account of its progress and management in Dublin; a review of its state in Cork, and of the legislative means adopted for its suppression; a comparison of the fevers of 1741 and 1817; and a full review of the causes, medical and statistical, productive of epidemic fever in Ireland. This last portion is most interesting and highly valuable. We shall indulge in an extract or two.

"After this review of the leading causes of Epidemic Fever, and after the preceding exposition of the different views entertained by Dr Barker and by me on the subject, it must appear that we agree in considering famine and want of employment as the great predisposing causes of the late Epidemic, and that we view contagion, in conjunction with them, as the chief source of the diffusion of the disease: We differ, however, as to the competence of these predisposing causes to generate Fever independently of contagion; and also as to the agency and introduction of foreign contagion, which I consider very improbable, and so very unnecessary in accounting for the production of the disease, that I entertain not the smallest doubt, it would have occurred to as great an extent even though Ireland had been placed under the strictest quarantine, or though a single case of Fever had not existed in any other part of the globe. It is indeed my firm conviction, founded as well on my own observation as on the experience of others, that Contagious Fever is a disease which, though extinguished, and with it every "infected circle" or fomes destroyed, may readily be revived under that combination of circumstances already described, a *combination* which it is not in the power of man ever effectually to prevent." pp. 187, 188.

"It has been stated that contagion is the *great* immediate and general source of Typhus Fever, and that war—famine—want of employment—uncleanliness, personal and local—unventilated dwellings and crowding, are the causes which, if not competent to give rise to Contagious Fever, are, at least, those which can alone diffuse it epidemically in any country. It is not denied that Ireland has suffered, and does suffer more severely from this form of disease than any other country in Europe, though for more than a century it has been exempt from one of the most prolific sources of that disease, *war*. Why is it, then, that Ireland should thus be afflicted? Simply because she is and has been more exposed to the influence of the other predisposing and exciting causes; *causes* greatly aggravated, in the opinion of many, by her redundant population. Here again arises a series of other questions, which, if not difficult, are at least not very agreeable in solution. Why is it that Ireland, blessed with the richest soil and the most temperate climate, abounding in natural wealth and in every convenience for tillage, manufactures and trade, and annually exporting an immense redundance of grain, of sheep, and of black cattle, should yet suffer more severely from *famine* than the countries she supplies, and that her inhabitants should experience such want and misery? Why is it that such *want of employment* should exist? Why such uncleanliness in the persons and habitations of her people? Will it be said that these are questions not within the province of the physician, but of the statesman or statistical inquirer? Unquestionably, it is the province of the statesman to obviate these evils; but it is not less the province of the physician to investigate them, if it constitute any part of his duty to trace the causes of disease through all their ramifications, leaving it to the statesman to devise the best means of removing them. To what useful purpose would it tend to trace the great frequency and epidemic prevalence of Contagious Fever in Ireland to the poverty, wretchedness, uncleanliness, and idleness of its inhabitants, unless we advance a step farther, and inquire whence originate that state and these habits?"—*Harty*, pp. 193, 194.

The Reports of Drs Cheyne, Stoker, Grattan and Crampton, the Inaugural Dissertations of Drs Cuming and Crawford, and the translation and enlargement of that of Dr Rogan, are all valuable additional documents to the History of the Fever as it appeared in the hospitals of Dublin, and in the provinces of Ireland.

In England, the epidemic seems to have been much less general or alarming, and has given rise to few publications. The only additional accounts of its progress and form in particular places, are those of Dr Prichard of Bristol, and of Mr Sandwith of Bridlington.

"The city of Bristol has been, during several years, remarkably free from contagious fever; but in the course of the last three years it has, in common with most towns and districts in the United Kingdoms, experienced its share of the visitations of this distemper. In the year 1817, there were sufficiently clear indications that it was on the increase; and, during the course of the two succeeding years, there were few or no parishes, and, I believe, few streets, where it has not frequently displayed itself.

"In the autumn of 1817, I endeavoured to excite the attention of the public to this subject. Facts had fallen under my observation during the course of that year, which clearly indicated, as I thought, that contagious fever was on the increase in Bristol and its vicinity, and which rendered it probable that the diffusion of this disease would become very general. These facts, and the apprehensions founded upon them, together with some hints respecting the propriety of adopting public measures of precaution, were expressed by me in a letter which appeared in Felix Farley's Journal. The reception hich this communication met with, was a general outcry against me or having created a groundless alarm. It is now well known to the ublic that the apprehension I entertained was fully verified. I need nly to refer to a collection of letters published by an individual dis-inguished by her good sense and zeal for the public good, in a pamphlet recommending the establishment of a Fever Hospital."—*Prichard*, pp. 6, 7.

We have quoted this passage as an exemplification of that which we believe always takes place at the commencement of every epidemic fever. When its existence is first announced by some observing individual, he is generally treated as an alarmist, and his warning disregarded, because some are unwilling to think that others are more quicksighted than themselves, and all are unwilling to believe unpleasant tidings. The total number of cases affected seems to have been 2213. The second section contains a summary report of 359 cases of fever observed at St Peter's Hospital, nearly in the manner of the Edinburgh Clinical Reports. The fourth section contains observations on the symptoms, pathology and medical treatment; and the last an inquiry into the causes of epidemic fever. From the former, we see that the fever in Bristol did not differ materially from the fever in Edinburgh and other places, where it has been described; and that the same treatment produced similar effects. In the latter, Dr Prichard resorts to the "old fashioned, and almost exploded hypothesis of Sydenham; I mean the doctrine of a pestilential constitution of the air, or the notion that certain changes take place in the condition of the atmosphere, imperceptible to our senses, and eluding chemical tests, which predispose human bodies to febrile diseases, in such a way, that circumstances which, in ordinary times, would only give rise to a catarrh, an attack of rheumatism, or even occasion no indisposition at all, will now in many individuals become the exciting causes of continued fever.

"Visionary as this opinion seems to be, when it is first announced, there are several considerations which appear to me to bring it within the sphere of probability.

"1. The remarkable changes of form which fever displays during the succession of seasons, indicate that the state of the elements exerts a great influence in developing the character of this distemper. Its various types depend on the predisposition to particular forms of disease, resulting from the influence of the atmosphere in its different states. If it is allowed that these agents exert so much controul over the habitudes of the body as to dispose it to all these modifications in the character of fever, it seems not remote from probability that the general predisposition which renders this disorder epidemical at any particular time, may depend upon the influence of the same causes.

"2. The rapid diffusion of epidemic diseases through extensive regions, or their simultaneous appearance over considerable portions of the earth's surface, seems to evince the operation of similar causes. What less extensive influence, for example, can be conjectured to have occasioned the appearance of the yellow fever in certain seasons, over so large a part of the United States and West Indies? To what other cause are we to ascribe the fatal diffusion of this disease during the present year, through the West India islands, the Continent of America, and the Spanish Peninsula? For explaining such phenomena as these, it is not sufficient to trace an infected ship to a particular port, or to smell out a bog on a piece of marshy ground near some particular town.

"This remark applies, indeed, to those diseases which by some writers have been termed epidemic, in contradistinction to contagious maladies. But we have reason to believe that this distinction has been represented by medical theorists as wider than it really is. If indeed the doctrine of the spontaneous origin of continued fever be allowed, I do not know on what plea this disease can be refused a place among the disorders strictly termed epidemical; for the attempt to discriminate these maladies universally by their type, can hardly be thought to have succeeded."—*Prichard*, pp. 98—101.

Mr Sandwith's publication is also very creditable; but it is rather a general treatise on continued fever, derived from personal observation, than a local report; although he has given a very full tabular view of 70 cases occuring from January 1818 to December 1819. He is a great advocate for the free use of the lancet.

The principal work on the Fever, as it appeared in Scotland, in addition to those formerly noticed, is the account of the manner of treating it in the Fever Hospital at Queensberry House by Dr Welsh, who acted as superintendent of that establishment under Drs Hamilton, Spens and Home. It contains a very valuable Appendix of Cases and Tables; and, in the body of the work, gives the topography and domestic arrangement of the hospital, meteorological tables for 1818, account of the epidemic, observations on its causes, review of the tables, sketch of the history of venesection in fever, observations on the efficacy of blood-letting in the present epidemic, and the general conclusion which he draws from the whole consideration of the subject. Dr Welsh is the greatest advocate for the use of the lancet in fever that has appeared in modern times; and we must candidly say that, in our opinion, he entertained too high opinions of its general utility, and carried it to excess both in frequency and quantity. His work is, however, particularly valuable, in showing how far it may be pushed without evident injury.

The Inaugural Dissertations inserted in our list, are all the result of the actual observation of their authors, and are therefore valuable additions to the history of the Epidemic.

The systematic works of Drs Bateman, Percival, Armstrong, and Clutterbuck, are each of them possessed of a high degree of merit; and we confess ourselves unable to give, in a few words, any discriminative characters. Dr Clutterbuck, in a preceding work,† of which he has led us to expect the continuation, was the first to show the analogy between fever and inflammation, and thus to lead to the subsequent changes in public opinion and practice. Dr Clutterbuck, from the period of his first publication, has continued to pay unremitting attention to the subject, and the present work is the fruits of his more deliberate judgment and extended experience.

Drs Bateman and Percival are now both insensible to praise and censure. Of the latter, indeed, they received no portion during their lives; and the former may be now more freely bestowed upon them, that it cannot offend their delicacy. To say that we enjoyed their friendship, is to praise ourselves;—that we deeply lament their untimely loss, is to express the opinion of the whole profession.

Dr Bateman was peculiarly qualified for the task he undertook, by his great learning, and his having, for a long series of years, paid unremitting attention to the state of fever in the metropolis, while physician to the House of Recovery. Dr Percival's experience was perhaps still greater, as he was in extensive practice in Dublin from the commencement of the late epidemic, and had the immediate charge of the Hardwicke Fever Hospital. Of Dr Armstrong's first edition we formerly spoke at considerable length. In the one now before us, he has endeavoured to give a more extended view of the subject; but our limits will not permit us to transcribe even the list of the various topics introduced by this fluent writer.

It is gratifying to find, that, in all essential points, writers so highly qualified agree; thereby mutually confirming their individual accuracy of observation and judgment.

All of them agree in considering continued fever as a pathological state, if not identical with, at least approaching to inflammation. The distinction of Cullen into Synocha, Synochus, and Typhus, is abandoned by all. Every fever commences with excitement, and terminates in debility. Typhus is now used chiefly as the generic appellation of continued fever, and ought never to be employed as designating a peculiar character in the nature of the fever; but perhaps it would be better to abandon the use of the term altogether. Dr Percival's division of continued fever is into severe, mild, and very mild; Dr Bateman's into simple and complicated; which, in terms, accords with that of Dr Clutterbuck, although they essentially differ:—Dr B. considering the fever to be complicated when the brain is evidently affected, and Dr C. considering the brain to be affected in every case of fever, and the complications to consist in simultaneous affections of other organs. We may concede to Dr C., that the brain is affected in every case of fever; but does not almost every other organ of the body suffer? Broussais has lately convinced almost all the younger part of the profession in France, that fever essentially consists in inflammation of the mucous membrane of the stomach and intestines, (*Gastro-enterite*); and in other schools, the liver has been thought chiefly to suffer. In our opinion, one difference between general fever and local inflammation is, that, as the appellations imply, one part only is primarily affected in the one, while the whole system is deranged in the other. We never saw a case of fever in which the functions of the brain were not somewhat disturbed; languor, lassitude, inattention, indifference, depraved sensation and perceptions: but, on the other hand, we never saw a case of fever without loss of appetite, increase of thirst, deranged alimentary functions, interrupted assimilations. The action of the heart and arteries, and the functions of respiration, never remain altogether unaffected. When the whole system suffers in nearly an equal degree, the fever may be called *simple*, and these may be slight or severe in every degree; although, when very severe, one organ commonly suffers disproportionately, constituting what is called a complicated fever. When one organ is almost exclusively affected, the diagnosis between continued fever and local inflammation is often difficult; and we have seen cases so like phrenitis, pulmonitis, cynanche, carditis, gastritis, enteritis, peritonitis, metritis, cystitis, and even rheumatism, that we either remained uncertain as to the diagnosis, or derived it from concomitant circumstances, such as the existence of the epidemic, or probability of the operation of contagion, or preceding or supervening affections. Still, however, we agree so far with Dr C. in thinking, that in every case of general fever, the brain is seriously affected.

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† Inquiry into the Seat and Nature of Fever, as deducible from the history of the Disease, the Effects of the Remedies, and the Appearances on Dissection. 8vo. London, 1807.

All our authors, both systematic and monographic, agree in considering contagion to be one of the causes of fever; although they admit that it often has a spontaneous origin, as it is called; and it seems to be also the general opinion, that spontaneous fever is capable of propagating itself by contagion, in circumstances favourable to its development and operation; that is, in crowded and ill-ventilated apartments, and among the poor depressed by misery, cold and want.

The treatment of fever is the last topic, upon which we shall say a very few words. Conformably to the modern opinion of its nature, the antiphlogistic treatment is generally adopted; and it is interesting to see the gradual manner in which it has been revived. Even during the prevalence of the Brunonian doctrine, their system of excitation was limited to medicinal articles; for they never recommended external heat; and the patients fortunately would not make use of stimulating diet. Even their diffusible stimuli often had a good effect, though not in the way they conceived, but by exciting diaphoresis, and thus acting antiphlogistically and by depletion. Cullen's antimonials acted partly in the same way, and partly by inducing nausea and depression—an action the most decidedly antiphlogistic. But the first great improvement was the free exposure of the patient to cold air; a practice borrowed perhaps from the treatment of smallpox, dictated by the selfish prudence of the attendants, and vehemently desired by the patient. The next great step was the more decided reduction of morbidly increased temperature, by the direct application of cold water to the skin in various ways. It was to the eloquence of Dr Currie that the rapid diffusion of this salutary practice was chiefly owing. Dr Hamilton senior, of this place, next introduced the free use of purgatives, and proved, from his extensive experience, that debility was not the condition most to be dreaded in fever. The transition from cold air, cold water, and purgatives, to the detraction of blood, seems sufficiently natural, and in the older writers, there was sufficient experience to warrant the practice; but it must be confessed, that it was slowly and reluctantly adopted by the profession at large, even after its recommendation by Dr Mills of Dublin. One reason for this may have been, the cautious manner in which he employed it, in consequence of which its good effects were less marked, and a ready explanation of the results might be found, in supposing that it only did no harm. Afterwards, however, it was employed with the utmost freedom, and often to excess, so that its good and bad effects are no longer doubtful; and it is now very generally practised both locally and generally, but with caution and moderation. Detraction of blood is practised chiefly with two views; either to palliate urgent symptoms, and thus to augment the chance of recovery, or to cure, that is, cut short the disease.

"*Blood-letting*" (says Dr Clutterbuck) "to a moderate extent, when employed in this *incipient* stage of fever, will generally, as far as my observation goes, bring the disease to an almost immediate termination. I have frequently had recourse to it at this period, under the circumstances mentioned; and never without decided advantage."

"The *necessity*, however, of employing so Herculean a remedy, at such a period of the disease, and before any alarming symptom has appeared, will, perhaps, be questioned. Without doubt, it may often be safely dispensed with. But still, *in the particular circumstances alluded to above*, and considering how little we are able to foresee the future course of the disease, the practice appears to me to be both justifiable and proper; and we make ourselves responsible, I think, for all the bad consequences that may ensue from the neglect of it." pp. 96, 97.

"Blood-letting" (in like manner, asserts Dr Welsh) "is one of the few remedies which seem to cut short the fever. Of this fact, the most satisfactory proof has been afforded to me, both in the Royal Infirmary and Queensberry House. From a great number of others, I have selected ten cases, which stand foremost in the Appendix, as fair examples of this, at various periods of the disease: but instances of the fact might have been multiplied to an immense extent, almost to half the number of patients received into Queensberry House. By comparing, in our tables, the distance of the period of convalescence from the date of admission, with its length under other treatment, it will easily appear, that the number of cases cut short has not been overrated." pp. 168, 169.

Notwithstanding, however, our perfect confidence that these gentlemen firmly believed what they have asserted, yet we fear they have been misled by their speculative opinions, or by their partiality for a particular practice. We shall not go *so far* as to deny that fevers have sometimes been cut short, and perhaps oftener by bloodletting than by any other treatment; but, from very extensive practice we will venture to assert, that this has taken place in a very inconsiderable proportion of cases only. Having witnessed Dr Welsh's practice in Queensberry House, and having repeatedly imitated it in the most favourable circumstances, this difference of opinion as to a matter of observation may appear singular. But the difference is more apparent than real. When patients are bled freely in the first week of fever, the symptoms seem often to be suspended for about a week; but very frequently they return, though in a less severe form, in the third week of the disease. Such instances are considered by Dr Welsh as instances of fever cut short, followed by relapse. We think the fever was only suspended and protracted. From Dr Welsh's tables, the total relapses seem to be about one in six and a half; and, in the third quarter of the three, during which he has stated the results of his practice, they amounted to one in three and three-fourth cases.

Although decidedly partial to the general antiphlogistic treatment of fever, we think that the use of anodynes has of late been too much neglected; and that there is still much to learn concerning the combination of anodynes, stimuli, and tonics, with the depleting practice.

PART III.

MEDICAL INTELLIGENCE.

On Wednesday, 1st August, the Senatus Academicus of the University of Edinburgh conferred the degree of Doctor in Medicine on the following Gentlemen (102 in number), after having gone through the appointed examinations, and publicly defended their Inaugural Dissertations:—

From Scotland.

Anderson Angus, De Apoplexia Idiopathica.
James Begbie, . — Delirio Trementi.
Benjamin L. Brown,— Asthmate Spasmodico.
John Campbell, . — Hydrothorace.
John Clark, . . — Febre Remittente.
David Corbet, . . — Hypochondriasi.
Ed. Willson Duffin, — Hydrocephalo.
James Duncan, . — Filaria Medinensi, seu Gordio Medinensi.
Fr. M. Fairbairn, — Scarlatina.
John Grant, . . — Diabete.
John Halkerston, — Sanguinis missione.
David Johnston, . — Quibusdam lucis effectibus.
Wm. Johnston, . — Gonorrhœa Virulenta.
John Liddell, . — Febre Flava.
James Mackie, . — Cynanche tracheali.
Geo. Tod Moxey, — Puerperarum Hysteritide.
Robert Nimmo, . — Pneumonia.
Mungo Park, . — Ophthalmia.
James Rankine, . — Fœtu Humano.
William Seller, . — Causis quæ hactenus Medicinæ moram fecerunt, deque spe Melioris Medicinæ.
Andrew Simpson, — Remediorum ad ægros Accommodatione.
Adam Trotter, . — Rheumatismo.

From England.

Jos. S. Allanby, . — Hydrope Pectoris.
William Baker, . — Natura Principii Vitalis.
H. Blegborough, — Hæmoptysi.
Henry S. Boase, . — Contagio.
Ro. H. Brabant, — Valetudinis ex Animo Mutatione.
John Burne, . — Missione Sanguinis.
John Conolly, . . De Statu Mentis in Insania et Melancholia.
John Darwall, . — Morbis Artificum.
William Farrar, . — Causis Animalium Caloris Genetricibus.
Thomas Filkin, . — Diabete Mellito.
James Gibbon, . . — Partu Accelerando.
John Gibbs, . . . — Dysenteria.
John Goldwyer, . — Pathologia Pulmonum.
John Hannath, . — Cataracta.
John Hennen, . . — Ossium Necrosi.
John Hooper, . . — Hydrophobia.
Geo. Sam. Jenks, — Cœlo Tabescentibus benigno.
Samuel Jeyes, . . — Pneumonia.
S. Shering Keddle, — Scrophula.
Charles Locock, . — Cordis Palpitatione.
Joseph Ralph, . . — Diarrhœa Infantum; ejusque varietatibus, et causis, et consiliis medendi ad singulas accommodatissimis.
Daniel Rositter, . — Tetano.
R. Wakefield Scott, — Bronchocele.
John Simpson, . — Spina Dorsi vitiosa.
William Stafford, — Natura et Usu Medicamentorum Purgantium.
Edgar Stanfield, . — Hydrocephalo Acuto.
C. Tho. Stephenson, — Contagione.
George Symes, . — Hydrocephalo.
J. Dou. Wynter, . — Fonte Caloris in Animalibus Respirantibus.

From Wales.

Owen Davies, . — Rubeola.
W. Powell Smith, — Variola.

From Ireland.

De Burgh Birch, — Strictura Stabili in Urethra.
Jervis Blackman, — Ophthalmia.
Anth. Eben. Blest, — Typho.
William C. Blest, — Amenorrhœa.
James Cooke, . . — Phthisi Pulmonali.

Francis Crumpe, De Amaurosi.
Charles Cupples, — Asthmate.
Daniel Denny, . — Hysteria.
Thomas Dillon. . — Concoctione Ciborum.
Edm. Al. Douglas, — Dyspepsia.
John Duignan, . — Neuralgia.
Thomas Garde, . — Pneumonia.
George Hopkins, — Phthisi Pulmonali.
Charles Ingham, — Pneumonia.
Edward Kelly, . — Enteritide.
James Kirwan, . — Dysenteria.
Rhynd Lawder, . — Febre Puerperali.
Thomas Lewis, . — Dysenteria, prout in Calidis Regionibus, occurrebat.
Francis Lyons, . — Febribus Intermittentibus.
W.J.MacCormick, — Spasmo Tetanico.
J. N. Moorhead, — Phthisi Pulmonali Tuberculosa.
Robert Moorhead, — Pneumonia.
Mer. M. Moriarty, — Febre Continua ut sese habuit in Nos. Reg. Edin. Cubiculis Clinicis in æstate Anni 1820, curante J. Home, M. D.
Patrick Murphy, . — Rheumatismo.
Caldw. Ormsby, . — Typho.
James Orr, . . . — Scrofula.
John Parke, . . . — Dysenteria.
Sam. Raymond, . — Peritonitide Puerperarum.
Rich. J. Robinson, — Retroversione Uteri.
George Roe, . . , — Respiratione.
Michael Ryan, . . — Genere Humano ejusque Varietatibus.
J. Barclay Shiel, De Affectionibus Animi deprimentibus.
Ra. Sm. Stewart, — Dysenteria.
William West, . . — Syphilide.
Rich. Woodward, — Absorptione Cuticulari.

From East Indies.

Paris Tho. Dick, — Insania.

From West Indies.

Jos. Von Bretton, — Lue Venerea.
Geo. W. Stedman, — Scarlatinæ sequelis.

From Jamaica.

Swaby Plummer, — Scarlatina Anginosa.
Edward Tucker, — Framboesia.

From Barbadoes.

H. G. Straghan, . — Tetano.

From Antigua.

Wal. S. Morson, — Scirrho Canalis Alimenti.

From Bermudas.

John Frith, . . . — Febre Flava.

From Dominica.

Lud. A. Giraud, — Hepatitide.

From America.

Elliot O'Donnell, — Febre Continua.

From Canada.

Ben. Berthelet, . . — Galvanismo.
J. B. Cur. Tristler, — Rabie.

From Nova Scotia.

Jas. F. Avery. . . — Usu Moræ.
G. Ed. Fairbanks, — Carcinomate Uteri.

From Lausanne.

Lud. A. Perey, . — Acidi Oxalici vi venenata.

Medical Lectures in the University of Edinburgh, commence on Wednesday, October 24th.

Dietetics, Materia Medica and Pharmacy, Dr Duncan, jun. 8, *a. m.*
Practice of Physic, Dr Home, 9, *a. m.*
Chemistry and Chemical Pharmacy, Dr Hope, 10, *a. m.*
Theory of Physic, Dr Duncan, sen. and Dr Alison, 11, *a. m.*
Hospital, 12, *noon.*
Anatomy, Pathology, Dr Monro, 1, *p. m.*
Surgery, Dr Monro, 4, *p. m.*
Midwifery, Dr Hamilton, 3, *p. m.*
Clinical Medicine, Dr Graham and Dr Alison, 4, *p. m.*
——— Surgery, Mr Russell, 5, *p. m.*

Practical Anatomy under the superintendence of Dr Monro.

During the Summer Session, Lectures will be given on the following Branches of Medical Education:—

Botany by Dr Graham.
Midwifery by Dr Hamilton.
Clinical Medicine by Dr Graham.
Clinical Surgery by Mr Russell.

NIVERSITY OF MICHIGA

Medical and Chemical Lectures, London.

In the first week of October, the usual Courses of Lectures,—

1. *On the Practice of Physic*, and the *Laws of the Animal Economy*, with *Pathological Demonstrations*, will commence in George Street, Hanover Square, by George Pearson, M.D. F.R.S. Senior Physician to St George's Hospital, of the College of Physicians, &c. &c.
2. *On Chemistry*, at the Royal Institution, Albemarle Street. By W. T. Brande, Sec. R. S., Professor of Chemistry at the Royal Institution, &c. &c.
3. *On Therapeutics*, with *Materia Medica*. By George Pearson, M. D. F. R. S. &c. &c.

Professor Mackenzie, of the Andersonian Institution, Glasgow, will commence a Course of Lectures on the Institutions and Practice of Medicine, on the 6th of November.

Medico-Chirurgical Society of Edinburgh.

It is with pleasure that we announce the formation of a Medico-Chirurgical Society in Edinburgh. The Society is formed upon the model of the Medico-Chirurgical Society of London, and has in view precisely similar objects. Most of the Medical Professors in the University, and many of the most respectable Practitioners in the city, have cooperated in its formation. Dr Duncan senior has been elected its First President. Its sitting commences in the approaching Winter Session.

In addition to Ordinary and Honorary Members, provision is made for the admission of Corresponding Members; and it is hoped that many in almost every part of the world, and such especially as retain a grateful recollection of the advantages they derived from their Alma Mater, will not be backward in supplying interesting Communications.

Communications may be transmitted to the President of the Society, or to either of the Secretaries, according to the following addresses.

Dr ALISON, 44, Heriot Row.
Dr ROBERT HAMILTON, No. 3, Northumberland Street.

Extracts from Correspondence with Thomas Stewart Traill, *M. D. Liverpool, containing an Analysis of the Serum of the Blood, in which Oil was detected.*

The individual in whose blood I lately detected *oil*, has since been attacked with well-marked inflammation of the liver, for which he was bled by his medical attendant Mr Parr. To the kindness of that gentleman I was again indebted for some of the serum of his blood, which exhibited the colour and consistence of that described in the 67th No. of your Journal.

Its specific gravity = 1.018438, being somewhat less than the serum of the blood formerly drawn.

The bottle by which the specific gravity was found, contained 281.7 grains of serum; and this quantity was slowly evaporated on the hob of a grate, until the watery part was wholly dissipated. The surface of the coagulum was covered by a very sensible portion of oil, which was transparent, of a yellowish colour, and perfectly fluid when hot, but became solid, opaque, and grayish white, at the usual temperature of the air.

I succeeded in removing the whole of the oil while it remained fluid, by successive applications of slips of bibulous paper, which had been previously weighed. The brittle coagulum was also broken down, and gently heated between folds of the same, until it ceased to stain the paper. The weight gained by the paper = 6.9 grains.

After the separation of the oil, the brittle coagulum weighed 39.3 grains.

From this the saline matters were separated by soaking it in distilled water; and the fluid, when evaporated, yielded 1.8 grain, principally consisting of cubic crystals of muriate of potassa and soda, with some lactates. Hence the solid matter of the serum consisted of 37.5 gr. albumen, and 1.8 gr. of saline matter. We may then estimate the composition of 281.7 grains of this curious serum as follows.

Water	= 235.5	- -	= 83.59
Albumen	= 37.5	or in 100 parts -	= 13.31
Oil	= 6.9	- -	= 2.44
Salts	= 1.8	- -	= 0.65 nearly.

It appears to differ from healthy serum, not only in containing a considerable quantity of *oil*, but in a great excess of albumen, and a diminution of the saline ingredients; for, according to Berzelius, human serum contains about 8 per cent. of albumen, and 1.4 per cent. of saline matter.

I have some prospect of obtaining the blood of the same person in health, when a comparative analysis may throw some light on the change induced by disease.—*Liverpool, June 12th,* 1821.

The milky appearance of human blood has been remarked by different physiologists; and the following passage from the Philosophical Transactions of London for 1666, alludes to a phenomenon similar, in all probability, to that now under consideration.

" A curious *person* wrote, not long ago, from *Paris*, that they had, in the *house* of a *physitian*, newly opened a man's *vein*, wherein they found *milk* instead of *blood*.

" This being reported to *Mr Boyle* at *Oxford*, his answer was, *That* the like *observation*, about white *blood*, had been made by a learned *physitian* of his *acquaintance*; and that the *thing* being by him looked upon as remarkable, he was desirous to have it very circumstantially from the same *physitian* himself, before he would say any more about it."—*Phil. Trans.* Vol. I. p. 100.

Liverpool, 28th July.

In our Number for April (p. 318. of this Volume), we noticed the commencement of the new Quarterly Journal of Experimental Physiology, by Dr Magendie. We have now to announce the arrival of the three first Numbers, viz. for January, April, and July; and we are happy to remark, that the execution of this work promises to sustain the high reputation of its Conductor. Although the matter which is contained in these Numbers is at once novel, various, and important, yet as our limited space does not permit us to give any detailed account, we shall, for the sake of our more remote readers, subjoin a mere notice of the articles in each, with the hope that, at some future period, we shall have an opportunity of bestowing on them a greater portion of our attention.

The Number for January presents the following Articles:

1. Memoir on the Mechanism of Absorption in Animals with red and warm blood. By M. Magendie.
2. Memoir on the Organs of Absorption in the Mammiferous Animals. By the same.
3. Note on a new Extract of Opium. By M. Robiquet, Professor at the School of Pharmacy of Paris.
4. On the Introduction of Viscid Fluids into the Organs of Circulation. By M. Magendie.

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5. Experiment on Rabies Canina. By M. Magendie.
6. Memoir on the Lymphatic Vessels of Birds. By M. Magendie.
7. On the Inflammation of the Spinal Chord. By M. Pinel, jun., M. D.
8. Experiments on Veratrine. By M. Midral, jun.
9. Note on the Nerves which go to the Whiskers of the Seal. By the same.
10. Note on the Seminal Vesicles of the Guinea Pig, and on the Fluid contained in them, compared with the Fluid of the two Vasa Deferentia. By the same.
11. Memoir on the Structure of the Lungs of the Human Subject; on the Variations in this Structure in different Ages; and on the first Origin of Pulmonary Phthisis. By M. Magendie. With a Plate.
12. New Analysis of Quinquina. By Mess. Pelletier and Caventou.
13. Anatomical and Chemical Researches on a Case of Chronic Hydrocephalus. By M. Breschet, Chief of the Anatomical Studies of the Faculty of Medicine of Paris.

The Second Number, published in April, contains the following Articles:—

1. General Reflections on the Circulation of the Blood. By M. Magendie.
2. Memoir on the Action of the Arteries in the Circulation. By the same.
3. On Spicula occurring in Complicated Fractures. By Messrs G. Breschet and L. R. Villermé.
4. Experiments on the Eighth Pair of Nerves. By Mr Broughton. *Translated from the Number for January of the Journal of the Royal Institution.*
5. On the Influence of the Motions of the Chest, and Efforts in General on the Circulation. By F. Magendie.
6. Memoir on the Theory of Vision. By M. Vallée. With a Plate.
7. Report on a Memoir of M. Audoin on the Thorax of Articulated Animals and Hexapodous Insects. By M. Cuvier. With a Plate.
8. Physiological Memoir on the Effects of Mercury on the Animal System, ascertained experimentally. By M. Gaspard.
9. On the Accidental Entrance of Air into the Veins; on the Sudden Death which it Occasions; on the Means of preventing this fatal Accident, and obviating its Effects.
10. Case of Accidental Introduction of Air into the Jugular Vein of a Horse which had been blooded for Pneumonia, the fatal Effects of which were obviated by the immediate Renewal of the Operation.
11. On a Motion of the Spinal Chord isochronous with Respiration.

In the Third Number (for July) we find the following Articles.

1. Theoretical and Experimental Researches on the Mechanism of the Motions and Attitudes of the Human Subject. By F. Roulin, M. D.
2. Effects of Herbaceous Aliments on the Human Economy. By B. Gaspard, M. D.
3. Additional Experiments on Mercury, &c. By the same.
4. Observations on the Bite of the Viper. By the same.
5. Memoir on Vomiting. By M. Piédagnel.
6. Cancer of the whole Stomach, with Vomiting. By M. L. F. Gondret, M. D.
7. Physiological and Medical Experiments on the Acetate of Lead. By B. Gaspard, M. D.
8. Case of Malignant Intermitting Fever cured by the Sulphate of Quinine.
9. On the Mechanism of Muscular Ruptures. By M. Roulin, M. D.

Preparing for Publication.

In the Press, and speedily will be published, a Translation of LAENNEC's Work on the Diseases of the Chest, new arranged and condensed into one volume. By JOHN FORBES, M. D. Penzance, Cornwall.

ERRATA.

In the concluding paragraph of Dr GAIRDNER's Case of Abdominal Tumour, the third line, page 409, should run—"the case further shows the insidious nature of the disease; indeed the disease was here scarcely at all observable," &c.

IN the Notice of Professor Kühn's edition of the Greek Medical Writers, contained in the last Number of the Edinburgh Medical Review; instead of "the Work is formed on the plan of the *present Greek Classics*" read, "the plan of the *Bipont Edition of the Greek Classics.*" It may also be added, that the Work is expected to extend to thirty volumes.

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